

**EVALUATION OF IDRC PROJECT:**

**88-1010**

*Enseignement de l'informatique documentaire  
(Sénégal, Maroc, Canada)*

by

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## PREFACE

### Language of report

This report is written in English as the author thought that acceptable English was preferable to his laboured written French and that the target audience is proficient in reading both languages. Extracts and quotations from project documents are given in the language in which they were written, which was almost always French. All French language text is printed in *Italics*.

### Acknowledgements

The author would like to acknowledge with gratitude the many interviews which were accorded to him and the patience with which questions were answered during the evaluation process. He would also like to acknowledge with appreciation his interesting and stimulating contacts with the project team over the whole period from conception of the project through to completion, when he was wearing another hat. Of necessity, this report is selective, and responsibility for selection and interpretation are entirely his own.

### Abbreviations

AIESI:	<i>Association internationale des écoles de sciences de l'information</i>
AUPELF:	<i>Association des universités partiellement ou entièrement de langue française</i>
BIEF:	<i>Banque d'informations sur les États francophones</i>
CAI:	Computer-assisted instruction. This term is used as the English equivalent of EAO. The expression CAI module is equivalent to <i>didacticiel</i> .
CASIS:	Consortium of African Schools of Information Science
CD-ROM	Compact Disk - Read-Only Memory
CIDA:	Canadian International Development Agency
CCRIT:	<i>Centre canadien pour la recherche en informatisation du travail</i>

<i>CND:</i>	<i>Centre national de documentation, Rabat, Maroc</i>
<i>CNDA:</i>	<i>Centre national de documentation agricole, Rabat</i>
<i>EAO:</i>	<i>Enseignement assisté par ordinateur</i>
<i>ÉBAD:</i>	<i>École des bibliothécaires, archivistes et documentalistes, Université Cheikh Anta Diop, Dakar</i>
<i>ÉBSI:</i>	<i>École de bibliothéconomie et des sciences de l'information, Université de Montréal</i>
<i>ÉSI:</i>	<i>École des sciences de l'information, Rabat</i>
<i>ID:</i>	<i>Informatique documentaire. This abbreviation is used throughout the report in French and English text as there is no accepted English translation of Informatique documentaire. ID consists of the application of the most appropriate tools of information technology to the documentation field.</i>
<i>IDRC:</i>	<i>International Development Research Centre</i>
<i>I01, ..., I18</i>	<i>Indicators 1 to 18. These indicators are measures of the attainment of project objectives and are listed in Appendix 2.</i>
<i>ISD</i>	<i>Institut supérieur de documentation, Tunis</i>
<i>ISSD:</i>	<i>Information Sciences and Systems Division of IDRC</i>
<i>IT</i>	<i>Information technology</i>
<i>LAN</i>	<i>Local Area Network</i>
<i>PCR:</i>	<i>Project Completion Report</i>
<i>RESADOC</i>	<i>Réseau sahélien de documentation</i>
<i>Unesco:</i>	<i>United Nations Educational, Scientific and Cultural Organisation</i>

## References

The majority of the report is the author's interpretation of what he heard and observed during the activities detailed below in the section "Accomplishment of terms of reference of contract". References to a name and month are to discussions with the person named in the course of this evaluation, or to extracts from project reports dated that month.

Abrack, 5/94: Saïda Abrack at Réunion de concertation  
 Bachr, 5/94: Ahmed Bachr at Réunion de concertation  
 Benjelloun, 11/94: Mohamed Benjelloun at ÉSI  
 Camara, 11/94: Alioune Camara at Dakar  
 Carmel, 11/92, Lucie Carmel at ÉBSI  
 Courrier, 5/94: Yves Courrier at Réunion de concertation  
 Courrier, 11/94: Yves Courrier at Unesco  
 Deschatelets, 2/94: Gilles Deschatelets, *Rapport technique no. 7 (final)*  
 Deschatelets, 4/94: Gilles Deschatelets, *Bilan du coordinateur*  
 Deschatelets, 5/94: Gilles Deschatelets at Réunion de concertation  
 Deschatelets, 11/94: Gilles Deschatelets at ÉBSI  
 Drouin, 1/95: Raymond Drouin at CIDA  
 El Hamdouchi, 3/94: Abdelmoula El Hamdouchi, *Rapport final provisoire*  
 El Hamdouchi, 5/94: Abdelmoula El Hamdouchi at Réunion de concertation  
 El Hamdouchi, 11/94: Abdelmoula El Hamdouchi, list of indicators  
 El Hamdouchi, 11a/94: discussions at ÉSI, included Abdelmoula El Hamdouchi, Najat Rochdi, Saïda Abrack  
 Lajeunesse, 11/94: Marcel Lajeunesse at ÉBSI  
 Legault, 11/94: Maryse Legault, *Indicateurs fournis par l'ÉBSI*  
 Legault, 11a/94: Maryse Legault at ÉBSI  
 Marcoux, 5/94: Yves Marcoux at Réunion de concertation  
 Marcoux, 11/94: Yves Marcoux, *Contribution aux indicateurs*  
 Marcoux, 1/95: Yves Marcoux, email  
 Rochdi, 5/94: Najat Rochdi at Réunion de concertation  
 Sagna, 4/94: Olivier Sagna, *Rapport technique final*  
 Sagna, 10/94: Olivier Sagna, *Éléments d'information* (indicators)  
 Sagna, 11/94: Olivier Sagna at ÉBAD  
 Sané, 11/94: Ousmane Sané in Dakar

## Summary

This project aimed to improve the teaching of *Informatique documentaire* (ID - the application of the most appropriate tools of information technology to the documentation field) in three Francophone schools of Information Science. New computerized teaching tools for ID were obtained and produced by the project. The purpose was to equip graduates of the two schools in Francophone Africa with the skills needed to apply information technology more effectively in their work. The project was funded by IDRC and CIDA and administered by IDRC.

This evaluation was made from May to December 1994 in accordance with the terms of reference of the contract of 24 May 1994. Material was gathered at a meeting of all project staff in May, during visits to project sites in November, and from project files in Ottawa from October to December. In addition to 10 assessments of the project asked for in the contract, it was specified that answers be provided for questions in the Project Completion Report, that the ISSD Evaluation methodology be tested, and that trends in ID be examined. Material for the Project Completion Report is not included in the present document but is reported separately.

This summary is a synthesis of these various approaches. It is cast in two time frames, before the project started and after it had finished. The first is an evaluation in terms of the objectives, outputs and expectations when the project was formulated (1988). The second is an evaluation in the present context (1994), taking a look at the adequacy of the initial aims of the project, the reasons for success and failure, and taking into account the evolution of evaluation methodology.

## Pre-project aims and expectations

Of the thirteen Objectives of the project, one was exceeded, ten were met, one fell below and one fell well below expectation.

Objectives which were met included increases in the expertise of the teachers of ID, the duration and scope of ID training, and the status and self-sufficiency of the schools and of their ID staff; improvements in the ability of graduates of the two African schools to profit from the advantages of ID; development of an original evaluation methodology for software teaching tools; evaluation and creation of such tools; cooperation between the three schools; and dissemination of the results of the project. The objective which was exceeded involved increase in the facilities for practical training in ID at the three schools, because other donors provided additional facilities, in part inspired by the project.

The objective which fell below expectation was the establishment of a program of permanent cooperation between the three schools, since *ÉBAD* and *EBSI* had considerable reservations about mutual cooperation after the project. The objective that fell well below expectation was the alignment of the *ID* programs in the three schools, which was found to be unattainable within the short and perhaps the long term.

The sixteen planned outputs of the project, consisting of documents, procedures, software packages and videos, were all produced except for one CAI module and one video. These outputs have been submitted to scrutiny in each of the three schools, but their quality can only be evaluated by a peer group and may become evident with reactions to their dissemination. Two products, added to the original fourteen after the project started, were in recognition of the increasing importance of CD-ROM in the *ID* field.

There were some changes in the implementation of the project compared with what was planned. The most important were the replacement of *missions de travail* with *réunions de concertation* (to increase collaboration), and the active participation of Unesco, especially in the attempt to align the Academic Programs of the three schools.

IDRC's expectations, according to the project Appraisal, echoed the project objectives but were different in emphasis. Mentioned several times in the Appraisal but not explicitly in the Objectives was the expected improvement in quality of graduates from the two African schools, who would be able to use modern information technology to make information more accessible to researchers and thus enhance research capacity in Africa. This expectation was met in the sense that teachers, graduates and their employers all said the recent graduates were more able to use informatics tools in their work, but there was no opportunity to find out directly if this did in fact benefit researchers. CIDA contributed more than half of the project budget and saw the project as a follow-up to a previous project of cooperation between *EBSI* and *ÉBAD*. From the *Accord de contribution*, CIDA expected technology transfer to occur, an improvement to occur in information management in Senegal, and a continuing partnership to result between the two schools. The first two expectations were met but not the third.

## Post-project perspective

### Adequacy of objectives, outputs, plans and implementation

The ISSD evaluation methodology now judges a project in the framework of four Divisional objectives: capacity building, improved collaboration, information innovations, and better access and use of information. The first three of these formed the basis



of the project objectives and outputs, but the fourth Divisional objective was neglected in the Project Proposal, even though it was the only Divisional Objective referred to in the Project Appraisal. To take account of this Divisional Objective, the project objectives could with profit have included improving access to and use of information in Francophone African countries. To achieve this, the project outputs could have been phrased to include both better trained graduates and the results of a survey, to be conducted during the evaluation, to link their new skills with information use.

Other assessments of the effect of the project which are included in this evaluation deal, like the objectives and the outputs, with intermediate results in the schools rather than ultimate results in the countries. These include impacts on the curricula (a much greater proportion of time is now devoted to ID), on the institutions (status increased, informatics integrated into the organization), on sustainability of services (teaching and consultation more in demand), and on research capability (team work, research management skills, international research). Most impacts were positive, but at *ÉSI* it was noted that students are frustrated because there are not enough computers to go around.

An objective which had not been spelled out but which is implied in much of the work of the project was to discover how best to use the new technology of Computer Assisted Instruction (CAI) in the teaching of ID. This objective was attained in that the pros and cons of using CAI were understood, including limits on its domain of application and the influence of its preparation on subsequent teaching. CAI has been little used so far in the classroom for teaching ID (the two modules produced in the project were the first in the field in French), but was found useful at *ÉBAD* and *ÉSI* for teaching general informatics.

The evaluation of the project was assisted by the provision by the schools of indicators of achievement of the project aims. These were requested only at the end of the project. The indicators were sometimes difficult or impossible to obtain because no records or baseline data existed, and their value would have been enormously increased had they been designed into the project from the beginning.

The project took longer than expected, almost 6 years instead of 3. CIDA was surprised that the project took a year to get started following signature of the agreement with IDRC. This time was taken in obtaining signatures of the three participant schools. The actual execution time was 4½ years instead of 3. However, the original proposal called for 4 years, and it was reduced to 3 at IDRC's request. Another 8 months was taken by evaluation after the activities had finished, mostly waiting till the schools were back in session. All of these delays were of more concern to the donor agencies than to the project beneficiaries.

The project budget was almost adequate. However, all the contingency funds were spent and another 9% contributed by Unesco for complementary activities (especially training) not foreseen in the project budget but which helped in its accomplishment.

### Reasons for success or failure

The most important result of the project, the excellent absorption of the new technologies into the teaching at *ÉBAD* and *ÉSI*, leading to recognisable improvement in skills of their graduates, came about because the moment was right for the project, the need was recognized by IDRC, and the basic project design was good. The mixed quality of the implementation was largely a consequence of the varied personalities and knowledge of the actors involved as well as IDRC's project management policies. High spots were superb collaboration at the frequent *réunions de concertation*, smooth management at *ÉSI*, and ground-breaking research at *ÉBSI*. Low spots were initial poor coordination of the project, problems with equipment supplied to *ÉBAD* and *ÉSI*, and poor communications in part due to the persistent failure of *ÉBAD* to install its fax. IDRC played a big part in design of the project, especially in bringing in *ÉSI*. IDRC's policy is to leave responsibility for management to the project personnel, which pays off in the case of success (e.g. the enhancement of status of *ÉSI*), but backfires in the case of failure (e.g. a rupture in relations between *ÉBAD* and *ÉBSI*). A more pro-active policy of monitoring the project when serious slippages occurred or where a change of management took place might have helped prevent or reduce the negative effects.

Two seeming failures of the project were more apparent than real, being due to unreasonable aims based upon incorrect assessments before the project. One was the lack of delivery by *ÉBAD* of a CAI module and a video. The commitment that each school produce the same number of outputs did not take account of the very different levels of *ID* at which the schools entered the project, with *ÉBAD* being behind *ÉSI* and well behind *ÉBSI*. The other apparent marked failure of the project was that little progress was made in aligning the programs of the three schools, even by getting Unesco involved. However, this was an enormously ambitious target, involving the overturning, in a few years, of decades or even centuries of different influences on curricula and culture by Europe and North America. The work which was done will form a useful basis for the future.

Further support

*Informatique documentaire* is constantly evolving. There are many new avenues opening up, some of which are being explored by the participants in this project. For instance, *ÉSI* is active in bringing Morocco into the INTERNET and *ÉBSI* in the standardization of electronic formats. The project has started several other lines of investigation and thought (CAI applied to *ID*, the theory of textual databases known as *Fichier plat*<sup>1</sup>, and *harmonisation des programmes*), which will doubtless be pursued in various ways. However, no specific follow-up activity for the three schools is recommended as it seems that they are forming new alliances.

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<sup>1</sup> Attempting to introduce the same rigour into the theory of textual databases as already exists for relational databases. See pages 65-66.

MANDATE

This work was carried out in accordance with the terms of reference in the contract of 24 May 1994 bearing file number 88-1010.

ACCOMPLISHMENT OF TERMS OF REFERENCE OF CONTRACT

- Note 1: The terms of reference included three different approaches to evaluation: a methodology detailed in the contract involving ten ASSESSMENTS, completion of a draft PCR, and testing of ISSD methodology. These approaches often overlapped. In particular, the ISSD evaluation methodology encouraged the use of indicators of attainment of objectives. These indicators were freely drawn upon in ASSESSMENT 1.
- Note 2: The impact of the project as such was strictly speaking impossible to measure as there were other simultaneous changes going on in the three schools which had similar influences. As is noted in various places in this report, these other changes were themselves partly induced by the project, but were also inspired by the increasing influence of IT on all members of the staff of the schools, not just those engaged in work on the project.
- a) Attainment of project objectives is reported in detail in ASSESSMENT 1 (page 15) while the production of project outputs is reported in detail in ASSESSMENT 2 (page 44).
  - b) The impact of the innovation introduced by the project on the curricula is reported in detail in ASSESSMENT 3 (page 47). The impact on the performance of teaching staff is reported under Specific Objective 1 (page 22) and on the performance of students under Specific Objective 5 (page 32).
  - c) The resulting impact on participant institutions is reported in detail in ASSESSMENT 4 (page 51).
  - d) Impact on the sustainability of services offered by the participating institutions is estimated in ASSESSMENT 5 (page 53).
  - e) Unanticipated results of the project are described in ASSESSMENT 6 (page 54).
  - f) Stakeholders' satisfaction with the project in relation to expectation is judged in ASSESSMENT 7 (page 55).

- g) The performance of the project team and the project coordinator are reported in ASSESSMENT 8 (page 58).
- i) Opinions on resources needed to improve collaboration and methods of extending collaboration are recounted in ASSESSMENT 9 (page 63).
- j) Recommendations on follow-up action are given in ASSESSMENT 10 (page 65).
- k) Suggested answers to the questions posed in the PCR are given in a separate report. This includes some material, additional to that given in ASSESSMENTS 1-10, on IDRC management performance, development impacts of this project, recommendations on IDRC support to projects, and on evaluation of projects.
- l) This report and the PCR Report constitute the report required by the Contract.

Activities under the contract:

- a) Project files have been studied at IDRC Ottawa, *ÉBSI*, *ÉSI* and *ÉBAD*. Project files at IDRC Dakar and CIDA Dakar could not be studied because of lack of time during the trip to Dakar while those at CIDA Hull were not studied because they contain only financial data.
- b) Discussions were held with IDRC representatives in Ottawa and Dakar, CIDA representatives in Hull and a Unesco representative in Paris.
- c) Though work with other "related" organizations was foreseen in the project formulation, in fact no such work was carried out. The only outside organization which had any direct effect on the project was the *Centre National de Documentation (CND)* in Rabat. I visited the *CND* during my trip to Rabat. The Director of the *CND* expressed himself very satisfied with the *ÉSI* and the quality of their graduates (for which he is the biggest employer), The *CND* supplied a terminal and modem to enable *ÉSI* staff to consult national databases. Some *CND* staff also participated in practical training at *ÉSI*. However, their participation was not crucial to the project. During the coming year, some of the project products will be sent to *AIESI* members to evaluate.

d) Travelled to:

Montreal (ÉBSI) for Réunion de Concertation 25-27 May and 30 May 1994;

Montreal (ÉBSI) 1-3 November 1994

Paris (Unesco) 21 November 1994

Rabat (ÉSI and CND) 22-24 November 1994

Dakar (ÉBAD) 25-27 November 1994

- e) Reviewed literature on *Informatique documentaire* to locate experts and identify issues and trends. Discussed these with Gilles Deschatelets and Yves Marcoux at ÉBSI, 3 November 1994; Yves Courrier at Unesco, 21 November 1994, Abdelmoula El Hamdouchi at ÉSI 24 November 1994, Olivier Sagna at ÉBAD 26 November 1994, and Alioune Camara at Dakar, 27 November 1994. The results are given on page 68.

Testing of ISSD evaluation approach

This is dealt with in Appendix 1.

## ASSESSMENTS

Each assessment consists of two sections:

- (1) a summary written entirely by the evaluator and covering the entire matter being assessed, and
- (2) comments (and sometimes data) on specific areas within that assessment, either quoted from a project report (in French), or written by the evaluator (in English) as a synopsis of an interview (in French) about that matter. References are explained on page 6.

### Assessment 1: Attainment of project objectives

#### **General objective 1**

*Améliorer la qualité de l'enseignement de l'informatique documentaire à l'ÉBAD, à l'ÉSI et à l'ÉBSI*

#### Summary

The purpose of having this as the first General Objective was to help fulfil one of the main objectives of IDRC, to increase research capacity in developing countries. The project would do this by introducing, into the professional education of staff who supply documentary information to researchers, development of skills in the use of the most relevant tools of information technology. This discipline is known as *Informatique documentaire* - *ID*.

*ÉSI* and *ÉBAD*, are regional training centres for such personnel for francophone Africa. Prior to the project, *ID* barely entered into the curricula at the two schools and the project aimed to make up for this lack. It did so in no uncertain manner, and the training received has already begun to be put to use by the graduates of the schools. Thus the project can be considered a success.

*ÉBSI*, training mainly Canadian students, did not contribute directly to the attainment of IDRC's objective, but did so indirectly by working in close partnership with the other two schools in introducing *ID* (which was already an important part of its curriculum before the project).

This General Objective can be broken down into several components, and their attainment judged in relation to the attainment of Specific Objectives 1, 3, 5, 6, 7, and 8. In addition, parts of Assessment 3 are relevant. A summary of the attainment of the various components of General Objective 1 is given here as well as

comments by the project staff on its attainment. Further details will be found under the appropriate specific objectives and Assessment 3.

Acquisition by teachers of qualifications and skills in ID  
(Specific Objective 1)

Several very useful skills in informatics in general as well as ID were acquired by the teachers at the schools. Training courses in three areas were organized providing some qualifications, but skills were mainly picked up by reading manuals and during on-the-job practice.

Improvement in facilities for practical training in ID (Specific objective 3)

The project provided each school in 1990 with a set of computers and ancillary equipment needed for practical training in ID. These were installed as a LAN. Each school was able to obtain, partly because of the example of this project, other equipment also suitable for use in ID training. Time devoted to practical training in ID increased considerably in each school during the project.

Development of a critical sense, knowledge and know-how in ID among students (Specific objective 5)

This is evidently the crucial outcome of the project, since the graduates of the schools form the principal channel for disseminating the skills and knowledge acquired. From the point of view of IDRC, the two African schools were the centre of interest for this objective. Everyone - teachers, graduates and employers - agreed that the project had helped improve the quality of the graduates of these schools, in making them more able to profit from the use of information technology in their work.

The sample of graduates and employers interviewed was small but the message was unanimous. There was dissatisfaction among most of the ÉBAD graduates interviewed, not that the introduction of ID was a mistake, but that the school had not gone far enough and fast enough in that direction.

Improved access to databases (Specific objective 6)

This was achieved using CD-ROM products. In each of the three schools, CD-ROM hardware was introduced into the project LAN, and learning how to access databases on these formed an integral part of the training. This was especially important in the African schools, where the high cost of telecommunications forms a big barrier to access to databases on computers in developed countries.

More self-sufficiency in the schools in teaching ID (Specific



## objective 7)

This takes several forms and progress is more evident in the two African schools since they started much further back. They now know how to evaluate some kinds of IT products. They also are much more aware of CAI, which enables them to purchase outside expertise, and to spread expertise more widely among the teaching staff. They have become recognized as centres of proficiency in ID (and IT in general), which are called upon to assist other local users. Lastly, through the project, they have widened their contacts, which gives them access more readily to formal and informal help.

Transfer of expertise in ID to other documentary functions  
(Specific objective 8)

This has occurred, especially at ÉBSI, where some professors outside the project have developed some CAI modules. At the other two schools, where the staff was less acquainted with the use of computers, most transfer of IT know-how outside the project team has been in the area of word processing, but there are indications at ÉSI that ID applications are being taken up by other staff.

Impact on curricula (Assessment 3)

The principal impact has been that the amount of ID has increased at all three schools as a proportion of what is taught. It has increased in courses where it existed before, and has been introduced into other courses. Furthermore, the amount of practical training in ID has increased remarkably. At ÉSI, ID has disappeared as an option in the last year, being integrated into the other options.

Comments

Project leaders in the three schools had this to say:

ÉBSI: Quant à l'ÉBSI, la qualité de l'enseignement de l'ID n'a pas été affectée directement par le projet; l'École a toutefois très certainement profité du nouvel environnement informatique et des formations spécifiques générées par le projet. (Deschatelets, 2/94).

ÉSI: Le projet a marqué un tournant dans la vie de l'ÉSI par son impact sur les enseignants-chercheurs en révolutionnant leurs méthodes pédagogiques, notamment grâce aux didacticiels mis à leur disposition, et en les impliquant davantage dans des travaux de recherche (El Hamdouchi, 3/94).

ÉBAD: S'agissant de l'amélioration de la qualité de

*l'enseignement de l'ID, pour ce qui est de l'ÉBAD, l'objectif a été pleinement atteint. L'équipement en micro-ordinateurs, lecteurs de CD-ROM, imprimantes, onduleurs, logiciels, didacticiels et CD-ROM a permis d'organiser dans de bonnes conditions des séances de travaux pratiques, ce qui n'était pas possible auparavant...À raison de deux étudiants par machine et en fractionnant nos classes en deux groupes de Travaux Pratiques, il a été possible de faire en sorte que chaque étudiant puisse pratiquer réellement alors qu'auparavant, compte tenu du nombre limité de machines, les "travaux pratiques" se limitaient à des démonstrations où seuls quelques privilégiés arrivaient à voir et à comprendre quelque chose (Sagna, 4/94).*

## **General objective 2**

*Établir des liens de coopération (nord-sud et sud-sud) entre les trois écoles*

### **Summary**

These links between the three schools were certainly established and contributed a great deal to the outcome of the project. In fact, most of the products of the project (e.g. standardized methods of evaluation of software and databases, actual evaluations of such items, and CAI modules) were designed and made in various degrees by trilateral cooperation. Thus the cooperation was effective.

However, the cooperation was different from what had been anticipated when the project was formulated, and was less efficient. On the positive side, the whole project group met more frequently, since it was decided to replace a modest exchange among the schools of teachers by an increase in the number of *réunions de concertation*; also an unforeseen training session in Paris brought them together once more. These meetings were the high point of the project for many of the participants and resulted in the formation of a real team spirit which will doubtless have positive repercussions in the future.

On the negative side, communication among the partners when they were back in their schools was much less than had been hoped for. This was caused in part by the inability to establish electronic mail contacts, since neither Senegal nor Morocco had usable links to the Internet throughout the project - they are only now being forged. Another important reason was the failure of ÉBAD to install the fax machine which had been provided. A further

difficulty in the first year and a half of the project was that the Coordinator, Gilles Deschatelets, did not keep communication flowing; a situation which was remedied by the hiring of Maryse Legault to assist him in November 1989.

The cooperation and lack of it was in large measure a result of the actions of individual players in the project team. Further details are given in ASSESSMENT 8: Performance of project team (page 58).

### Comments

General: Cet objectif n'a été que partiellement atteint par le projet. Les liens de coopération qui ont été établis l'ont davantage été nord-sud que sud-sud. (Deschatelets, 2/94).

Lucie Carmel of ÉBSI sent 5 documents to ÉSI and ÉBAD during 1992:

Introduction à l'ID: outils pédagogique développés à l'ÉBSI (2/92),  
Fiches descriptives des logiciels, ... (2/92)  
Installation d'un logiciel de réseau (3/92)  
Installation d'un CD-ROM en réseau (4/92)  
Installation du CD-ROM Unesco (10/92) (Carmel, 11/92).

These documents were found very helpful by both recipients. Indeed, they were vital for the use of the products supplied.

ÉSI: The S->N cooperation was important because ÉSI produced a lot (Rochdi, 5/94).

Le projet leur a permis de s'ouvrir vers l'extérieur et de créer des liens d'amitié et de coopération avec des collègues du nord et du sud. (se référant aux enseignants-chercheurs) (El Hamdouchi, 3/94).

Table 01

### Collaboration entre les écoles au cours du projet

Année	Activités entreprises (en cours)
1990	- Formation sur l'EAO - Élaboration des ébauches de grilles d'évaluation de logiciels documentaires, CD-ROM et didacticiels
1991	- Critique de ces ébauches - Article sur le projet - Préparation des maquettes papier des didacticiels

1992	<ul style="list-style-type: none"> <li>- Formation sur Authorware à Paris</li> <li>- Critique des maquettes papier</li> <li>- Échange de scénarios des vidéos</li> </ul>
1993	<ul style="list-style-type: none"> <li>- Échange et critique des évaluations de produits et des didacticiels</li> <li>- Échange d'articles proposés pour publication</li> <li>- Critique du Rapport sur l'Harmonisation des programmes</li> </ul>
1994	<ul style="list-style-type: none"> <li>- Échange des didacticiels élaborés et Fiches techniques</li> </ul>

(El Hamdouchi, 11/94 re I10)

Personnel from ÉBSI who visited ÉSI in connection with another project supplied some useful information on networks (El Hamdouchi, 11a/94).

ÉBAD:

Concernant l'établissement des liens de coopération Nord-Sud et Sud-Sud, il est bon à rappeler que les écoles entretenaient déjà certaines relations et que des programmes de coopération les avaient déjà unis par le passé [A project financed by CIDA between ÉBSI and ÉBAD from 1982-1987 and another financed by CIDA between ÉBSI and ÉSI began in 1988.] Cela étant, il est indéniable que le projet a permis de renforcer et de développer ces liens de coopération et surtout de leur donner une autre ampleur en leur fixant des objectifs concrets et une dimension multilatérale. En effet par le passé la coopération sur l'axe Nord-Sud par exemple se faisait surtout du Nord vers le Sud et sur l'axe Sud-Sud se limitait pour l'essentiel à des échanges entre les directions des écoles. Cela étant, pour des raisons à la fois historiques, techniques, économiques et autres, il faut dire que le projet n'a pas véritablement atteint ces objectifs dans la mesure où nous n'avons pas véritablement réussi, en dehors des réunions de concertation, à faire un travail à trois. Ainsi, pour ce qui est de l'ÉBAD, la plupart du temps la communication s'est faite entre nous et l'ÉBSI et peu avec l'ÉSI, de même que Rabat était plus en relation avec Montréal qu'avec Dakar. Seul peut être Montréal a pu réellement avoir des relations de même niveaux avec ses deux autres partenaires du fait que l'ÉBSI pilotait le projet sur le plan administratif, assurait le rôle d'interface avec les bailleurs de fonds et gérât de manière centrale l'achat des documents et des divers produits nécessaires au bon déroulement du projet. Ceci dit, le fait de n'avoir pas atteint pleinement l'objectif est sans doute aussi dû à l'ambition et à l'originalité du projet d'avoir une dimension trilatérale au lieu de la traditionnelle

relation bilatérale. Cela étant, au plan individuel, il est certain que les liens à la fois personnels et professionnels ont pu être tissés tant avec les collègues canadiens qu'avec les collègues marocains sans considération d'origine géographique ou autre et cela à la grande satisfaction de tous (Sagna, 4/94).

I wanted to enter into a dialogue with Lucie Carmel since we had no specialist in the computer lab, but could not do so because of communications difficulties. I wished she could have visited ÉBAD, not only to solve technical problems, but also to advise on the management of the computer lab (Sagna, 11/94).

### General objective 3

*Jeter des bases d'un programme permanent de coopération et d'échanges entre les trois écoles*

#### Summary

The desire for permanent cooperation among the three schools seems to be less at the end of the project than this objective would indicate. This is in large part a reflection of the negative attitudes of the present Directors of ÉBAD and ÉBSI, formed by their contacts during the project.

#### Comments

GENERAL: Je crois que cet objectif ne pourra être que partiellement atteint. Considérant les problèmes survenus pendant le projet, la coopération avec l'ÉBAD est, à mon avis, compromise ou à tout le moins très hypothétique (Deschatelets, 2/94).

ÉBSI: Future joint projects are being considered with ÉSI and l'Institut supérieur de documentation (ISD), (Tunis). One such could involve the exchange of professors, financed by CIDA; in addition there may be other joint papers being considered (Deschatelets, 11/94).

A joint paper on the methodology of computerizing databases is being developed by Yves Marcoux (ÉBSI) and Ahmed Bachr (ÉSI) (Legault, 11/94).

ÉBAD: Au niveau du troisième et dernier objectif général à savoir la définition d'un programme permanent de coopération et d'échanges entre les trois écoles, il est peut être un peu prématuré pour se prononcer mais,

*malheureusement, il ne semble pas que l'on s'engage dans cette voie en partie en raison des difficultés mentionnées ci-dessus mais également pour des raisons à la fois financières et techniques (Sagna, 4/94).*

Collaboration has been very difficult because of problems of communication, different conditions in the three schools, non-respect of the electrical and keyboard standards in the equipment supplied, delivery delays and criticisms of our partners. Still, further collaboration, a second phase, is desirable, but there is nothing definite (Sané, 11/94).

### **Specific objective 1**

*Accroître les qualifications et l'expertise des formateurs en matière d'informatique documentaire*

#### **Summary**

#### **Areas of expertise**

Qualifications and expertise in several different aspects of ID were acquired by members of the project teams at the three schools. The following areas of expertise were involved. Some individuals already had some of this expertise before the project, and they selected areas to develop according to their interests.

1. Use of computers for general purposes, involving knowledge of:
  - hardware,
  - operating system software:
    - DOS
    - Windows
    - LAN,
  - application software:
    - WordPerfect
    - Lotus 123
    - etc.
2. Use of computers for ID applications, involving knowledge of:
  - documentary software:
    - CDS-ISIS
    - EDIBASE
    - TEXT0
    - etc.
  - CD-ROM consultation

3. Use of computers for running CAI:
  - Purchased packages
  - CAI modules generated by the project
4. Design and production of CAI modules
5. Evaluation of *ID* products:
  - documentary software packages
  - CD-ROMs
  - CAI modules
6. Management of a LAN
7. Design and production of a video on some aspects of *ID*
8. Research methods in the field of *ID*
9. Knowledge of what is going on elsewhere in the area of *ID*
10. Consulting practice in any of the above

### Training methods

These areas of expertise were acquired in some cases by organized training courses, in other cases by on-the-job training, reference to manuals, or collegial discussion at *réunions de concertation*. Only the former could be considered to provide a qualification. Organized training courses were as follows.

### Design, production and running of CAI modules

April 1990: Session of 3 days in Montreal by the company INFOJED on the theory of producing CAI. Participants:

Abrak, Saïda (ÉSI)  
 Bernard, Paulette (ÉBSI\*)  
 Deschatelets, Gilles (ÉBSI)  
 El Hamdouchi, Abdelmoula (ÉSI)  
 Gagnon-Arguin, Louise (ÉBSI\*)  
 Mercure, Gérard (ÉBSI)  
 N'Diaye, Ahmeth (ÉBAD)  
 Rochdi, Najat (ÉSI)  
 Rolland-Thomas, Paule (ÉBSI\*)  
 Sagna, Olivier (ÉBAD)  
 Vidalenc, Isabelle (ÉBSI)

\* did not work on the project

May 1992: Session of 5 days in Paris by the company CYCNOS on the practice of using AUTHORWARE. Participants:

Courrier, Yves (Unesco)  
 Deschatelets, Gilles (ÉBSI)  
 Marcoux, Yves (ÉBSI)

Abrak, Saïda (ÉSI)  
 El Hamdouchi, Abdelmoula (ÉSI)  
 Rochdi, Najat (ÉSI)  
 Sagna, Olivier (ÉBAD)  
 Sow, Mody (ÉBAD)  
 Tending, Antoine (ÉBAD)

April 1993: 10 days on-the-job training by Robert Miller given to ÉSI staff in Rabat, on AUTHORWARE.

August 1993: 10 days on-the-job training by Robert Miller given to ÉBAD staff in Dakar, on AUTHORWARE.

#### Management of a LAN (including with CD-ROM)

July 1991: 5 days practical training at ÉBSI. Participants:

Abrak, Saïda (ÉSI)  
 El Hamdouchi, Abdelmoula (ÉSI)  
 Rochdi, Najat (ÉSI)  
 Sagna, Olivier (ÉBAD)  
 Tending, Antoine (ÉBAD)

#### Use of computers for general purposes

July-October 1990: practical training was given by John Shortall to all the project participants at ÉBSI (4½ days), ÉSI (3½ days) and ÉBAD (2½ days), following the installation of the project equipment. The duration of training was shortest where it was most needed. This was because the total time allowed for installation and training was 5 days at each school, and installation took more time the further south it was done (difficulty in getting supplies, hot weather and no air conditioning, etc.).

#### Comments

GENERAL: *Objectif atteint à divers degrés à l'ÉSI, l'ÉBAD et l'ÉBSI. Certains formateurs ont très nettement accru leurs connaissances et leur expertise. Tous les formateurs ont développé une expertise intéressante dans la conception de didacticiels. (Deschatelets, 2/94)*

ÉBSI About 5 professors at ÉBSI have designed CAI modules as a result of the project (Deschatelets, 11/94).

*Utilisation de plusieurs outils pédagogiques développés pendant le projet, dans les cours de Recherche documentaire automatisée: grilles d'évaluation de CD-ROM, vidéo. Plusieurs projets de recherche d'étudiants pour*



la grille d'évaluation des CD-ROM et l'évaluation de produits (G. Teasdale, J. Froidefond, S. Michaud, C. Bourque, M-C Domecq) (Legault, 11/94 re I15).

One professor reported a positive impact on his teaching from access to CD-ROM; the project also helped him to adapt to ID from informatics, and to better understand CAI (Marcoux, 5/94).

Il m'est difficile d'évaluer comment mon approche pédagogique a été modifié par le projet, puisque j'ai joint les rangs du projet (et de l'ÉBSI) au même moment où j'embrassais la carrière professorale et où j'effectuais un changement de domaine (de l'informatique pure à l'ID). J'ai donc en fait développé le contenu de mon didacticiel (Le fichier plat) en même temps que le didacticiel lui-même. En ce sens, le projet a eu impact de me forcer à formuler des objectifs pédagogiques très précis (je me suis d'ailleurs rendu compte à la mi-parcours que mes objectifs initiaux étaient trop ambitieux) et à découper très finement la matière, choses que je n'aurais pas faites à un aussi haut degré si je n'avais pas eu à développer un didacticiel (Marcoux, 11/94)

Performance of teaching staff in ID was enhanced because of recognition of the Informatics Lab. as an important acquisition for the School, and the resultant support from the University (Deschatelets, 11/94).

ÉSI: Cette équipe [de sept enseignants-chercheurs, un ingénieur en audio-visuel et un technicien-assistant] a acquis ou développé, grâce au projet, une expérience dans l'élaboration de travaux de recherche. Elle a notamment acquis une expertise dans l'élaboration de didacticiels, de grilles d'évaluation de didacticiels, logiciels documentaires et bases de données sur CD-ROM et dans l'évaluation de ces différents produits. Les membres de cette équipe ont aussi pu mettre à jour leurs connaissances en matière de micro-informatique notamment en ce qui concerne la gestion des réseaux locaux (LAN). (El Hamdouchi, 3/94).

Enormous changes in practical teaching from CD-ROM and other products (Abrack, 5/94).

The skills of the professors on the project have increased; they are motivated, work two or three times as hard as the other professors (El Hamdouchi, 5/94).

L'introduction de didacticiels a permis de modifier la stratégie de la théorie vers le pratique et l'acquisition

d'un savoir-faire (El Hamdouchi, 11/94 re I15).

L>ID, par l'introduction des didacticiels à partir de 1991, a pris une part de plus en plus dans la formation. Ceci à donné:

Une libération des enseignants en niveau de l'encadrement des TP pour se consacrer plutôt à des problèmes de conception, d'étude de cas, de développement d'applications...

Une optimisation de l'utilisation des postes par l'accès libre et donc le problème au niveau des horaires et de l'espace. (El Hamdouchi, 11/94 re I15).

L'expertise des enseignants se traduit par des consultations plus fréquentes auprès des organismes publiques et privés (El Hamdouchi, 3/94).

#### EBAD

A travers l'abondante documentation, les contacts personnels, les formations et le travail de recherche, l'étendue des connaissances et le niveau de maîtrise de celles-ci a fortement progressé chez les enseignants assurant les cours d>ID. (Sagna, 4/94).

Forts d'une meilleure maîtrise de l'outil informatique et de la mise en accès libre d'une salle d'informatique comprenant une dizaine de micro-ordinateurs mon postes, les étudiants ont pu par ailleurs pratiquer et donc s'exercer à titre personnel bien au delà des horaires officiels. (Sagna, 11/94 re I15).

## **Specific objective 2**

*Harmoniser les programmes d'enseignement de l'informatique documentaire*

#### Summary

Leadership in achieving this objective was given to Unesco early on in the project, but Unesco had big delays in executing its part, and not much progress was made. In retrospect, this objective did need an external body to bring pressure on each school towards to common curriculum, so choice of Unesco was appropriate, but it seems the work to be done was too great for such a project.

CommentsGENERAL

Cet objectif n'est certainement pas atteint. Il faut dire qu'un tel objectif était beaucoup trop ambitieux pour un projet comme le nôtre. Toutefois, plusieurs discussions de fond ont eu lieu pendant le projet et le Guide d'harmonisation des programmes d'enseignement de l'informatique documentaire à l'ÉBAD, l'ÉSI et l'ÉBSI qui a été produit est un document très intéressant et très important pour jeter les bases d'une harmonisation éventuelle. À mon avis, c'est l'une des belles réalisations de ce projet. Son utilité future réside dans la volonté réelle des administrations des trois écoles d'envisager une telle harmonisation (Deschatelets, 2/94).

Could have two levels of harmonisation:

- (1) descriptions of the courses can never be the same because of different requirements, but
- (2) contents of courses can be common (Courrier 5/94)

The Coordinator has negotiated with Fondin (who has still not been finally paid) a revision of his report, which would be more analytical than hitherto. It would relate the curricula at the three schools to educational objectives, and provide a foundation for a future project of harmonisation. He is hoping that perhaps the AIESI (financed by the AUPELF) would support such a project, and that Unesco would come in, as it would help them formulate *Principes directeurs* for the teaching of ID (Deschatelets, 11/94).

ÉSI

Having the same products and the same equipment has helped us harmonise (Bachr, 5/94).

We will never have a common program because needs are different, but we could get a common nucleus. The consultant's report did not arrive until the end of courses for the year (Rochdi, 5/94).

ÉSI's comments on Fondin's report have been sent to Gilles. Harmonisation should lead to raising of levels; can be done by discussion, exchange. Our reforms are leading towards harmonisation - we no longer have option ID, same as ÉBSI. A second reform due in 1995 will put even more emphasis on computerization.

Harmonisation would help in exchange of teachers and teaching material (El Hamdouchi, 11a/94).

By the way, I proposed myself for the consulting job, but

they wanted an outsider (El Hamdouchi, 11a/94). Probably El Hamdouchi would have been better as he understood first hand the situation in the three schools.

### ÉBAD

*L'étude des programmes d'enseignement de l'ID a montré que compte tenu des contextes, de la formation de base des enseignants, du profil des étudiants et des objectifs propres à chacune des écoles, il était pratiquement impossible d'harmoniser les programmes. Par ailleurs, les problèmes de coordination rencontrés avec le consultant initialement choisi par l'Unesco et les difficultés qui en ont découlées ont relégué au second plan cet aspect du projet. À l'heure où nous écrivons ces lignes les résultats du travail fait par Hubert FONDIN n'ont pas été encore portés à notre connaissance mais il nous semble important de poursuivre la démarche visant à définir les limites de ce qu'est actuellement et de ce que devrait être demain cette nébuleuse que l'on appelle l'ID (Sagna, 4/94).*

*Contrairement à nos attentes, le rapport Fondin n'a proposé ni directions, ni modalités, nous permettant de procéder à une harmonisation des programmes car il s'est limité à présenter une photographie de l'existant (Sagna, 10/94 re I18).*

Unesco I do not expect a lot from the re-write of Fondin's report (Courrier, 11/94).

## **Specific objective 3**

*Accroître les facilités de formation pratique en informatique documentaire*

### Summary

Each school acquired in 1990 through the project a similar set of computers for use in training: 8 IBM PS/2 model 55SX and 1 IBM PS/2 model 80 arranged in a LAN plus CD-ROM readers, printers, and other appropriate auxiliary equipment. Each school added, during the life of the project, more equipment, mostly IBM-compatible PCs, through other projects. It has not been possible to obtain information from ÉBSI and ÉSI on the use of these facilities. An increase in time devoted to practical work in the ID courses has been shown at ÉBAD.

Comments and data

GENERAL    Objectif nettement atteint et l'une des réalisations les plus tangibles de ce projet. Chaque école bénéficie maintenant d'excellentes facilités de formation pratique en ID... Par ailleurs, le projet a donné lieu à l'envoi, par la responsable des laboratoires d'ID de l'ÉBSI, de plusieurs outils de gestion et de support aux travaux pratiques (fiches-techniques, protocoles, etc.) (Deschatelets, 2/94)

ÉBSI

Table 02

Évolution du parc informatique de l'ÉBSIMicro-ordinateurs

	Avril 1990	Avril 1992	Avril 1994
IBM PC	7		
IBM PC XT	1	1	1
IBM PS/2 modèle 30	10	10	10
IBM PS/2 modèle 55SX		26 <sup>1</sup>	26 <sup>1</sup>
IBM PS/2 modèle 70 (portatif)		1 <sup>2</sup>	1 <sup>2</sup>
IBM PS/2 modèle 80		1 <sup>2</sup>	1 <sup>2</sup>
Zénith Z-248	1	1	1
Macintosh SE/30	1	2	2
<b>Total</b>	<b>20</b>	<b>42</b>	<b>42</b>

<sup>1</sup>    8 postes acquis dans le cadre du projet

<sup>2</sup>    postes acquis dans le cadre du projet

(Legault, 11/94 re I06).

The provision by the project of a group of computers in a LAN was a very strong encouragement to the University to provide further equipment (Deschatelets, 11/94).

ÉSI

Table 03

Augmentation du parc informatique depuis 1988

Année	Nombre de P.C.
1988	12*
1989	15
1990	28
1991	58
1992	68
1993	70**
1994	72**

\* Dont 10 "Apples"

\*\* Dont 10 "Apples réformés"

(El Hamdouchi, 11/94 re I06)

Of these computers, only 10 were provided by the project. Other donations of XTs made the use of didacticiels praticable (i.e. could be used by a large class) (El Hamdouchi, 11a/94).

ÉBAD

In addition to the equipment donated by the project, ÉBAD acquired another batch of 10 computers (Olivetti PCs) and one CD-ROM reader, which were installed in a separate computer room without LAN connection.

Comme déjà souligné, le matériel et les logiciels livrés dans le cadre de ce projet ont considérablement accru les possibilités de formation pratique de nos étudiants. Ainsi une des conséquences positives de la venue de ce matériel a été l'adjonction de séances de travaux pratiques aux cours d'ID qui jusque là se limitaient essentiellement à la dimension théorique. (Sagna, 4/94)

Depuis l'année 1992-1993, le didacticiel "J'apprends MS-DOS" est installé sur les machines ce qui permet aux étudiants de se familiariser avec les commandes du système d'exploitation à leur rythme et de compléter les éléments dispensés dans le cadre des cours et des Travaux Pratiques. En dehors de cela, aucun didacticiel n'est encore utilisé dans le cadre des cours, les didacticiels

élaborés dans le cadre du projet n'étant disponibles que depuis mai-juin 1994 en ce qui concerne l'ÉBSI et l'ÉSI et le didacticiel de l'ÉBAD étant en cours de finition. (Sagna, 10/94 re I05).

## **Specific objective 4**

*Évaluer, tester, adapter et développer des outils pédagogiques de langue française pour l'enseignement de l'informatique documentaire (documentation, logiciels, didacticiels, etc.)*

### **Summary**

Achieving this objective was the activity which occupied the project teams the most, as it was concerned with creating the tangible products of the project. These were nearly all delivered 100%, including two which were added during the project. Details of this achievement are given in the Section PROJECT OUTPUTS (page 44). Items not fully delivered were the CAI module by ÉBAD (still being worked on in November 1994), the video from ÉBAD (not attempted), and publications (still underway).

### **Comments**

**GENERAL**      Objectif très largement atteint. Le volet "évaluation de produits" de notre projet est l'un de ceux qui ont fait l'objet de beaucoup de travail et d'échanges. Les résultats sont d'ailleurs fort intéressants. Le volet "élaboration de didacticiels" a été fortement exploité par l'ÉSI qui y a investi beaucoup de temps et d'efforts avec des résultats qui dépassent nettement les objectifs visés. L'ÉBSI a aussi beaucoup investi dans l'élaboration de son didacticiel et dans l'évaluation des produits informatiques (Deschatelets, 2/94).

**ÉBSI**            Deschatelets did the Grille for the CD-ROM.  
  
Sylvie Michaud + Maryse + Gilles + about 5 students did the evaluations using the grilles.

**ÉSI**              Pas moins de sept enseignants-chercheurs, un ingénieur en audio-visuel et un technicien-assistant de l'ÉSI ont été impliqués dans le projet. Parmi ces neuf chercheurs, deux se sont occupés exclusivement du texte du vidéo et de son scénario tandis que l'ingénieur s'est chargé, avec la collaboration du technicien de l'ÉSI et d'un cadre de l'Institut Supérieur de Journalisme, de la mise en scène. Les quatre autres enseignants-chercheurs se sont occupés des autres volets du projet. Cette équipe a acquis ou développé, grâce au projet, une expérience dans

l'élaboration de travaux de recherche. Elle a notamment acquis une expertise dans l'élaboration de didacticiels, logiciels documentaires et base de données sur CD-ROM et dans l'évaluation de ces différents produits (El Hamdouchi, 3/94).

#### ÉBAD

L'évaluation puis l'utilisation d'outils pédagogiques de langue française comme le didacticiel "J'apprends MS-DOS" ont été d'une grande utilité. En effet en ce qui nous concerne, la place faite à l'ID dans les programmes étant faible en termes de volume horaire, la mise à la disposition des étudiants d'un tel outil nous a permis de diminuer le temps consacré à la révision des principales commandes du DOS. Cela étant, la réalisation du didacticiel nous a posé de gros problèmes, ce qui explique le non respect des délais, son côté inachevé et une qualité qui laisse à désirer. Les raisons sont multiples et parmi celle-ci on peut citer:

le profil des personnes impliquées dans le projet, qui bien qu'enseignant pour certaines l'ID, n'avaient pas de notions de programmation ce qui s'est révélé être à l'usage un handicap certain;

une pratique du travail d'équipe qui au lieu de se traduire par la coordination des compétences a consisté en un travail effectué le plus souvent en groupe, d'où une faible efficacité et un important gaspillage de temps;

une certaine démobilisation née d'un contexte interne difficile (Sagna, 4/94).

La vidéo sur la recherche documentaire en ligne, dont la réalisation était à la charge de l'École, n'a pu être réalisée compte tenu de son coût élevé (Sagna, 4/94).

### **Specific objective 5**

Exposer les étudiants aux outils informatique existants pour développer chez eux le sens critique, le savoir et les savoir-faire en informatique documentaire

#### Summary

The achievement of this objective was met. However, the extent was more difficult to measure than most of the others because of a lack of impartial means of assessing to what degree the qualities named had been acquired. Opinions make up the majority of the evidence available. These have been obtained from several sources and are



presented here in detail. They are nearly all favourable in that an improvement has been noticed in the quality of the graduates of the three schools in ability to profit from the advantages of *ID*.

Five kinds of information are included here (not all from each school):

comments by project staff on the attainment of this objective (extracts from final reports and summarized accounts by the evaluator);

indicators I03, I04, I16 and I17;

comments in interviews of employers of graduates by the evaluator;

comments in questionnaires by employers of graduates;

comments in interviews of graduates by the evaluator.

### Comments and data

GENERAL     *Objectif qui doit se mesurer à moyen et à long terme, dans la mesure où les outils, les produits et les connaissances développés dans notre projet seront intégrés aux divers enseignements dans chaque école (Deschatelets, 2/94).*

ÉBSI         This was done and there has been a considerable impact on the students, but we do not know how much of this is due to the project. The students themselves are not aware of that. There were many other influences at work to change the courses during the project, and it is impossible *a posteriori* to know what of this was due to the project (Deschatelets, 11/94).

### Indicators

All graduates since 1988 are employed (Legault, 11a/94 re I03). The position occupied by each graduate has been supplied, but they are not classified as *institution nationale ou régionale*, so this indicator cannot be obtained.

*Des notes des étudiants dans les classes touchées par le projet chaque année depuis 1988: Pas représentatif. Plutôt, modification aux plans de cours (Legault, 11/94 re I16).*

Table 04

*ÉBSI, Professor Marcoux's Courses, average marks*

<i>Année/Cours</i>	<i>BLT-6028</i>	<i>BLT-6351</i>	<i>BLT-6361</i>	<i>BLT-6371</i>
1991	N/A	86,5%	N/A	N/A
1992	84,5%	89,7%	82,9%	N/A
1993	86,1%	87,4%	82,2%	N/A
1994	N/A	N/A	85,1%	89,3%

*BLT-6028 = Introduction à l'ID*

*BLT-6351 = Structures et fonctions de logiciels documentaires*

*BLT-6361 = Création des bases de données documentaires*

*BLT-6371 = Recherche en ID*

*N/A signifie que le cours n'a pas été donné par moi cette année-là (Marcoux, 11/94 re I16)*

The Table above, supplied by Professor Marcoux, shows a slight and somewhat inconsistent improvement in grades, but the statistical significance has not been determined.

Table 05

Estimate of number of graduates capable of managing a LAN

<i>Année</i>	<i>Nombre</i>
1992	2
1993	3
1994	7

*Je ne crois pas que nos diplômés soient capables de gérer un réseau local directement à leur sortie de l'École. Les nombres correspondent aux diplômés qui, selon moi, pourraient acquérir les compétences requises pour gérer sans aide externe un réseau local en un temps raisonnable (de une à trois semaines) (Marcoux, 11/94 re I17).*

ÉSI Comments by project staff

*Les étudiants, à leur sortie de l'école, sont mieux armés pour faire face aux défis qui les attendent sur le plan professionnel où ils sont appelés à utiliser plus*

*intensément l'outil informatique (El Hamdouchi, 3/94).*

Table 06

Where graduates of ÉSI are employed

Where employed	Number
Government Ministries	846
Public Enterprises	20
International Organizations and Cultural Centres	14
Private Sector and Banks	20

(El Hamdouchi, 11a/94 re I03)

A list of graduates 92-93 and their employers was supplied (El Hamdouchi, 11/94 re I04). The questionnaires (Appendix 5) were distributed to graduates to give to employers (El Hamdouchi, 11a/94 re I04); two have been returned.

It is not possible to make estimates on how many students could manage a LAN. In 1990, a course on LAN was started, but it had to be dropped (El Hamdouchi, 11a/94 re I17)

Comments in interviews with two employers

*Institut Agronomique et Vétérinaire Hassan II, Centre de documentation agricole (CNDA), Monsieur Lemallem, Directeur, 94/11/24: Impacts of recent changes in teaching of ID at ÉSI on graduates have been:*

improved ability to analyze problems (e.g. how to create one database from many);

acquisition of knowledge in several new fields including:

how to produce *cahiers de charge*;

utilisation of several CD-ROMs;

practical familiarity with many software

packages for PCs such as CDS-ISIS, Lotus 123, dBASE III+, compared to only theoretical knowledge previously.

Centre National de Documentation (CND), Monsieur Bettioua, Directeur adjoint: we have about 55 professional staff of which 45 are graduates of ÉSI. Recently we have noticed an obvious improvement in the quality of the graduates. Their training has demystified the machine; when they come to us they are already familiar with computers.

Comments in questionnaires completed by an employer

The Director of the CNDA returned completed questionnaires regarding two graduates of ÉSI working at his Centre. Both had first graduated as *Informatistes* (i.e. completed Premier cycle), worked for a while, then returned to ÉSI for further training (after the project had modified the ID curriculum) as *Informatiste spécialisé* (i.e. completed Second cycle). The Director had the following comments concerning the changes in their performance which he judged due to their studying ID at ÉSI, and also concrete examples of these changes in performance which he had noticed.

*Les modifications de son rendement sont observées au niveau de l'analyse des problèmes et de la méthodologie de son travail.*

*Exemples:*

- *Différents étapes de la création d'une base de données (analyse des besoins, analyse des problèmes, solutions, systèmes proposés, etc.*
- *Au niveau du choix de l'équipement informatique.*

*Rendement constaté au niveau de la méthodologie de son travail.*

*Exemples:*

- *Performance au niveau des recherches bibliographiques.*
- *Formation des utilisateurs à l'utilisation de l'ordinateur pour les recherches bibliographiques.*

Comments in interview with a graduate

Monsieur Idouba, head of the Service Question-Réponse at

the CND, was at ÉSI 1977-80 and again 1988-90. In the first period only theory of ID was taught, there was no chance to practice. In the second period, equipment was installed, students could practice, and they learned to make databases and consult them.

### ÉBAD

*Le savoir et les savoir-faires des étudiants en ID ont incontestablement progressé. Cependant il n'a guère été possible de développer chez eux le sens critique car compte tenu de la faiblesse déjà soulignée du volume horaire consacré à cette discipline, nous avons privilégié l'apprentissage d'un outil (en l'occurrence Micro CDS-ISIS) au détriment d'un examen comparatif des outils existants (Sagna, 4/94).*

Students still ask for ID training to be strengthened and sometimes potential employers do so (e.g. Université de Yaoundé) (Sané, 11/94).

### Indicators

Graduates from ÉBAD work in 15-18 countries in Francophone Africa, but there has been no systematic attempt to follow-up on their place of employment. In Sénégal, the government decided, on the basis of public service cut-back policy, not to take all the Senegalese ÉBAD graduates during the 1980s, as had been the case before. Therefore, the proportion obtaining posts in national or regional institutions may have dropped recently, because of factors exterior to ÉBAD. Questionnaires (Appendix 5) for employers were not received, either directly or through Djilali Benmouffok (Sagna, 11a/94 re I04).

Library and Documentation students in Cycles 1 & 2 learned, in ID, use of Micro-CDS/ISIS and Texto. In their bibliography course, they worked with CD-ROM *Sésame, Choix/David, Robert électronique*. I could not estimate the number who had mastered any particular software package. None learned to set up a work station or manage a LAN (Sagna, 11a/94 re I17).

### Comments in interview with an employer

The only employer seen was the Director of the University Library, Henri Sène, which employs several graduates of ÉBAD. He was Director of ÉBAD when the project was formulated. He thought the project had brought benefits in the form of introduction of new technology, better teaching, and cooperation between the three schools.

There is a growing need for introduction of new

technologies in his work, such as the use of CD-ROM and the creation of databases. The ÉBAD graduates already have an idea of these technologies and this makes it easier for the Library to adopt them. The graduates are adaptable, and several of them have had other training in Informatics at their own expense, e.g. in Office Automation and dBASE.

#### Comments in interviews with five graduates

Benefits of courses at ÉBAD:

2 of 4 who are employed said they benefited from the ID aspects of the courses:

one (after 2nd cycle) feels more at ease with his job and is starting to put in various new systems;

the other thinks she would not have got her (temporary) job without ID training - all job openings need computer skills (another graduate has not found a post after 12 job applications).

Criticisms: number out of 5 voicing it

Not enough time for teaching (2 hr/week) or practice (2 hr/week) 4/5

Teachers go too fast 1/5

Replace obsolete courses such as History of Art, History of Civilisation, General Law by ID 2/5

A course is needed on marketing of information 1/5

### **Specific objective 6**

*Permettre une certaine autonomie des écoles face aux ressources externes et aux réseaux télématiques*

#### Summary

This objective was attained by bringing CD-ROM into the project to a greater degree than imagined when the project was designed. Access to databases on CD-ROM avoids on-line communication costs and difficulties.

Comments

GENERAL     *Objectif atteint dans la mesure où les produits CD-ROM peuvent être utilisés localement pour illustrer et soutenir certains enseignements en ID, notamment la recherche documentaire automatisée (Déschatelets, 2/94).*

ÉBSI            Use of CD-ROMs in courses increased a lot during the project. This is shown by the increase in the number of titles held at ÉBSI:

1988:	2
1989	12
1990	14
1991	33
1992	42
1993	48
1994	48

However, only 11 of these titles were from the project.

As an example of use, in 1991 10 courses used CD-ROMs in practical work, with between 1 and 11 titles per course. Also, there were between 305 and 919 loans of CD-ROMs for use outside the hours of practical courses per trimester from 1992 to 1994 (Legault, 11/94 re I01).

ÉSI              6 CD-ROMs were used, of which *LIAS* was used a great deal, especially in the *cycle supérieure*, *Wilson* and *Robert électronique* used to a medium degree, and *Unesco*, *Choix David* and *Mammals* little used.

7 documentary software packages were used, of which *ADHOC*, *Natural Pro*, *Autolib*, *CDS/ISIS* and *Lotus* were used very often; while *Dbase* and *Guide* used to a medium degree (El Hamdouchi, 11/94 re I01).

ÉBAD            *L'utilisation du CD-ROM, notamment dans le cadre des cours de recherche documentaire et de bibliographie, a permis de simuler la recherche en ligne dans de grandes bases de données tout en contournant les coûts de communications et les difficultés de connexion (Sagna, 4/94).*

## Specific objective 7

Permettre une certaine autonomie des spécialistes de l'informatique documentaire en matière d'apprentissage de l'informatique documentaire

### Summary

Autonomy was increased (especially at ÉSI and ÉBAD) in several areas: evaluation of IT products, use of CAI, recognition as centres of competence, widening of ID contacts.

### Comments

GENERAL      Objectif partiellement atteint. Je ne crois pas que l'on puisse de façon réaliste viser un tel objectif, si ce n'est à long terme. Toutefois, notre projet a permis à l'ÉBAD et à l'ÉSI d'obtenir de nombreux produits et outils informatiques qui leur apportent une certaine autonomie pendant quelques temps. Le problème sera de conserver cette autonomie à long terme. Deux facteurs permettent toutefois d'espérer: 1) l'expertise développée pendant le projet, notamment au niveau de l'évaluation critique des produits, leur permettra de faire un meilleur choix des produits qu'ils désirent continuer à exploiter, et 2) des liens se sont tissés pendant le projet qui pourront être exploités de façon informelle par la suite (Deschatelets, 2/94).

ÉBSI            Another area of self-reliance was the ability to make CAI. One professor developed CAI in the project. Three professors (Louise Gagnon-Arguin, Paulette Bernhard, Paule Roland-Thomas) outside the project developed CAI and used them in their teaching (Legault, 11/94).

Using CAI gives students some self-sufficiency in learning ID since they can go at their own pace. But CAI is little used in ÉBSI (Deschatelets, 11/94).

ÉSI              ÉSI is hosting a Regional Workshop on CAI 5-9 December 1994, with presentations by all members of the project team (El Hamdouchi, 11a/94 re I01).

The teachers at ÉSI also do quite a bit of informal exporting of their know-how as consultants.

Use of CAI makes them more autonomous in that even non-specialists in informatics can teach their students various informatics specialities (El Hamdouchi, 11a/94).



ÉBAD Le parc informatique acquis dans le cadre du projet a permis à l'ÉBAD d'accueillir un certain nombre de formations régionales (séminaires INIBAP, CTA, etc...) ayant un volet ID. Dans ce sens, le projet a mis à notre disposition un potentiel qui ne demande qu'à être utilisé dans le cadre de la formation permanente ou continue (Sagna, 4/94).

## Specific objective 8

Développer des expertises en informatique documentaire qui pourront être exportées aux autres fonctions documentaires du transfert de l'information (catalogage, indexation, acquisition, gestion, etc.)

### Summary

This occurred mainly at ÉBSI and to a lesser extent at ÉSI. At ÉBAD the transfer was mainly in the area of word-processing (not strictly speaking an ID skill).

### Comments

GENERAL Objectif à moyen et long terme qui dépendra très certainement de chaque école et des partenaires du projet. Il y a lieu d'être optimiste à l'ÉSI et à l'ÉBSI (où d'autres professeurs, par exemple, ont déjà développé et exploité, grâce au projet, d'autres didacticiels: catalogage, archivistique, sciences et professions de l'information, etc.) (Deschatelets, 2/94)

ÉSI Project team is often called upon to help colleagues (El Hamdouchi, 5/94). They begin with general informatics (wordprocessing, etc.), and gradually progress to ID (El Hamdouchi, 11a/94).

ÉBAD La mise en oeuvre du projet a développé au sein de l'École un mouvement vers l'outil informatique et aujourd'hui plus de 50% des enseignants fréquentent régulièrement la salle informatique jadis "réservée" à ceux qui enseignaient l'ID. Cependant en dehors des cours de recherche documentaire et de bibliographie et d'utilisation dans le cadre de la recherche (rédaction de travaux par le biais du traitement de texte), le portage vers les autres enseignements ne s'est pas effectué comme on pouvait l'espérer pour des raisons liées à la formation des formateurs et il faut bien le dire à un certain conservatisme (Sagna, 4/94).

## Specific objective 9

*Élaborer une méthodologie de recherche originale pour l'évaluation des logiciels documentaires et des didacticiels (plus CD-ROM (Deschatelets, 11/94))*

### Summary

This was the principal joint research activity of the project and was followed through by all the schools. Scientific articles on this activity are being prepared for publication.

### Comments

GENERAL Le volet de l'évaluation des produits informatiques (didacticiels, logiciels documentaires, CD-ROM) a donné lieu à beaucoup de travail dans chaque école et à beaucoup d'échanges entre les participants. En outre, il y a eu un effort très intéressant et assez original de normalisation dans l'élaboration des grilles d'évaluation des différents produits et dans la constitution d'un Glossaire commun. À mon avis, c'est le volet du projet qui a mieux atteint les objectifs visés, tant au plan des biens livrable, qu'à celui de la méthodologie de collégialité et de consensus que nous avons tentés (avec plus ou moins de succès selon les volets) d'implanter pour l'ensemble du projet (Deschatelets, 4/94).

ÉBSI Gilles developed the evaluation method for CD-ROM (Deschatelets, 11/94).

ÉSI ÉSI was the lead school in the development of the evaluation methodology for CAI (El Hamdouchi, 11a/94).

ÉBAD S'agissant de l'élaboration d'une méthodologie originale pour l'évaluation des logiciels documentaires et des didacticiels, la mission spécifique de l'ÉBAD était de travailler sur une grille d'évaluation des logiciels documentaires. Le travail a été mené à bien et c'est avec cet outil qu'a été évalué par exemple le logiciel Micro CDS-ISIS. Par rapport aux outils existant ici et là son intérêt réside dans la description détaillée des fonctions dont on peut disposer avec un logiciel documentaire. Plus qu'une grille d'évaluation, il s'agit en fait plutôt d'un guide pour le choix d'un logiciel documentaire dans le sens où l'on a recensé la plupart des fonctionnalités offerte sur le marché, l'utilisateur ayant en dernier ressort la responsabilité de faire son choix en fonctions des besoins qui lui sont propres (Sagna, 4/94).

## Specific objective 10

*Diffuser les résultats du projet et les produits qui en découleront à toutes les écoles de sciences de l'information des pays d'expression française*

### Summary

A channel for the distribution of the products is being set up by *ÉBSI*, using a brochure designed by *ÉSI*. See Appendix 6 for a list of publications to date.

### Comments

GENERAL Cet objectif sera atteint par la distribution, sur demande, des produits découlant de notre projet et par nos publications (Deschatelets, 2/94).

Un article collectif de présentation du projet a été publié dans le Journal of Education for Libraries and Information Services (JELIS). De plus, une réflexion sur l'évaluation des logiciels documentaires et un article sur l'histoire du projet sont en cours de rédaction (Sagna, 10/94 re I14).

The products of the course will be distributed free of charge to members and associate members of the *AIESI*. Also, a brochure informing outside organizations how to obtain products of the project is to be produced and distributed to many francophone documentary organizations via the *BIEF* (Deschatelets, 11/94).

ÉBSI Yves Marcoux gave a paper on his research on the *fichier plat* in May 1994 and is interested in following up this research.

ÉSI Developed and designed the brochure (1st and 2nd versions); also redesigned the logo because the one made on Montreal was not sent (El Hamdouchi, 11a/94).

ÉBAD They would like to have copies of the project products to distribute locally (Sané, 11/94).

Unesco Unesco might translate and publish "empty" *grilles* and *fiches techniques*, but it is not feasible to translate and publish *grilles remplies* because material rapidly outdates and because of the privileged status of the information. Also it is not feasible to translate educational material such as videos, CAI (Courrier, 5/94). The above was not a commitment: he would wait for a proposal from the project partners (Courrier, 11/94).

## Assessment 2: Production of project outputs

### Summary

Most of the output (products) planned were delivered, plus two more concerning CD-ROM. Outputs not completed were the CAI module and the video from ÉBAD and some publications on project activities, which are still being prepared. An assessment of quality of the outputs may be available from reactions to their dissemination.

### Comments

These results are reported in Deschatelets, 2/94.

#### Output 1

*Documentation sur l'harmonisation des programmes d'enseignement de l'ID à l'ÉBAD, l'ÉSI et l'ÉBSI*

*Fait. Publication autonome du consultant Hubert Fondin qui incorpore une bibliographie préparée par l'ÉBSI.*

#### Output 2

*Grille d'évaluation d'un didacticiel*

*Fait. Publication autonome de l'ÉSI. Également incluse dans le Cahier des évaluations. Article de revue.*

#### Output 3

*Évaluation de 6 didacticiels existants dans le domaine de l'ID*

*Nous n'avons trouvé aucun didacticiel en langue française en ID. Les didacticiels évalués sont en informatique. Les évaluations des didacticiels sont incluses dans le Cahier des évaluations.*

#### Output 4

*Grille d'élaboration d'un didacticiel*

*Ce volet n'a pas fait l'objet d'une grille séparée. Il est inclus dans le Guide d'accompagnement de la grille d'évaluation des didacticiels et est discuté dans l'article publié sur le sujet.*

Output 5

3 didacticiels de langue française pour l'enseignement de l'ID

Deux des trois didacticiels (ÉSI et ÉBSI) ont été élaborés avec le système-auteur Authorware. Celui de l'ÉBAD n'est pas terminé.

Output 6

Méthodologie originale d'évaluation des didacticiels

La méthodologie d'évaluation retenue n'a rien de vraiment original: 1) évaluation avec la grille élaborée par l'ÉSI, 2) évaluation comparative en classe, avec un groupe-test et un groupe-contrôle.

Output 7

Évaluation des 3 didacticiels élaborés pour l'enseignement de l'ID

Les deux didacticiels élaborés par l'ÉSI et l'ÉBSI sont évalués par les écoles.

Output 8

Grille d'évaluation de logiciels documentaires

Fait. Publication autonome de l'ÉBAD. Également incluse dans le Cahier des évaluations. Article de revue.

Output 9

Évaluation de 9 à 18 logiciels documentaires différents

Fait. Les évaluations des logiciels documentaires acquis pendant le projet (6) sont incluses dans le Cahier des évaluations.

Output 10

Documentation de support (adaptée ou originale) pour les logiciels documentaires et les bases de données sur disques optiques

Fait. Publication autonome de l'ÉBSI. Également incluse dans le Cahier des évaluations. Article de revue.

Output 11

Trois vidéos expliquant un aspect de l'enseignement de l'ID

Deux vidéos ont été réalisés, l'un par l'ÉSI et l'autre par l'ÉBSI. L'ÉBAD n'a pas produit le sien.

Output 12

Bibliographie annotée sur les outils didactiques pour l'enseignement de l'ID et des sciences de l'information

Fait par l'ÉBSI. Les bibliographies sont intégrées aux différents publications du projet (Guide d'harmonisation, Cahier des évaluations).

Output 13

Rapport annuel d'activités de chaque école

Fait.

Output 14

Publications

See Appendix 6.

Two products were added to the original 14 during the project:

Output 15

Grille d'évaluation des bases de données et produits documentaires sur CD-ROM

Fait. Publication autonome de l'ÉBSI. Également incluse dans le Cahier des évaluations. Article de revue.

Output 16

Évaluation des bases de données et produits documentaires acquis sur CD-ROM

Fait. Les évaluations des CD-ROM sont incluses dans le Cahier des évaluations.

### Assessment 3: Impact of the innovation introduced by the project on the curricula of the courses and of the performance of the teaching staff and the students in each school

#### **Note**

As mentioned previously, it is impossible to measure the impacts of the project directly as several other influences were making themselves felt in the schools while the project was going on. However, it was judged that this project was a major contributor to the changes noticed.

#### **Impact on performance of teaching staff**

See Specific objective 1 (page 22).

#### **Impact on performance of students**

See Specific objective 5 (page 32).

#### **Impact on curricula**

#### **Summary**

A major change at both *ÉBSI* and *ÉSI* was that *ID* as such disappeared as an option, the subject matter being integrated into the courses by 1994.

At both *ÉBSI* and *ÉSI*, many more options were introduced in 1989 or 1990. At the same time, a lot more practical work was introduced into the Curricula of all three schools, following the setting up of computer labs.

In each of the three schools, the proportion of time devoted to *ID* increased during the project. The tables below show the increases in hours per student per year. They were substantial: at *ÉBAD* from 10 to 60; at *ÉBSI* (depending upon the level and option) from 270 to 395, or 405 to 945, or 270 to 510, or 0 to 270; and at *ÉSI* from 220 to about 410. The changes in curricula occurred mainly in the academic years 1989-1992; the project effectively started in 1990.

Comments and dataÉBSI

Table 07

Average number of hours/student in ID for each option of the Masters Course

Option	88-89	89-90	90-91	91-92	92-93	93-94	94-95
Masters 1	270	395	395	395	395	395	395
Masters 2: ID & Tech Inf	405	405	810	945	945	945	945
Masters 2: Info. distr.	270	270	510	510	510	510	510
Masters 2: Cataloguing			170	170	170	170	170
Masters 2: Database			270	270	270	270	270
Masters 2: Management			170	170	170	170	170
Masters 2: Academic			45	45	45	45	45
Masters 2: Archiving			180	180	180	180	180

Note: there was a reform of the program independent of the project in 1989, but the project then getting underway did influence the choice of courses. ID is now integrated into all courses (Legault 11/94 re I02).

ÉSI

The number of students trained in ID each year since 1988 is not available: this information should have been requested at the beginning of the project (El Hamdouchi, 11a/94 re I02)

Table 08

Hours devoted to ID at ÉSI out of total taught  
Cycle des informatistes

Year	Yr 1	Yr 2	Yr 3	Yr 4	Total
1988-89	60/640	40/770	120/630		220/2040
1989-90 1990-91	0/710	60/740	130/750 or 200/750	120/980 or 260/980	310/3180 or 520/3180
1991-92 1992-93 1993-94	60/750	80/760	90/770 or 190/770	60/990 or 200/990	290/3270 or 530/3270
1994-95	60/740	80/760	180/950	90/950	410/3400



compiled from Hamdouchi, 11/94 re I09

ÉBAD

Table 09 shows the number of students enrolled for each course each year. There was no increase during the project. However, Table 10 shows that the number of hours of training in ID increased markedly as the project got under way (Sagna, 10/94, re I02).

Table 09

*Nombre d'étudiants formés en ID par niveau et par an*

Année	Cycle 1		Cycle 2	Total
	Bibliothèques	Documentation		
1988-1989	17	27	13	57
1989-1990	16	27	8	51
1990-1991	23	31	12	66
1991-1992	17	23	11	51
1992-1993	18	26	2	46
1993-1994	16	21	16	53
Total	107	155	62	324

Table 10

*Nombre moyen d'heures de formation magistrale en ID par niveau et par an*

Années	Cycle 1	Cycle 2	Total
1988-1989	10	0	10
1989-1990	10	0	10
1990-1991	20	0	20
1991-1992	30	30	60
1992-1993	30	30	60
1993-1994	30	30	60

Évolution des programmes d'études: Officiellement le contenu des programmes n'a pas changé depuis la mise en oeuvre du projet. Cela étant, des transformations considérables ont été introduites. Ainsi le cours d'ID destiné aux étudiants du premier cycle, jadis dispensé au second semestre, a été transféré au premier semestre permettant ainsi de faire passer le volume horaire d'une vingtaine d'heures à une trentaine d'heures de cours magistral. À cela est venu s'ajouter une trentaine d'heures de travaux pratiques qui nous ont permis de dépasser le stade de la simple démonstration que nous ne pouvions guère dépasser auparavant. De plus, l'introduction des travaux pratiques n'a pas été sans effets sur les cours magistraux qui sont devenus plus concrets que par le passé (Sagna, 10/94 re I09).

Table 11

Accroissement de l'utilisation du matériel informatique à l'ÉBAD

Année	Enseign.*	Recherche**	Demos.**
1988-1989	30	20	0
1989-1990	30	20	0
1990-1991	80	100	15
1991-1992	200	150	10
1992-1993	250	300	5
1993-1994	250	300	5

(Sagna, 10/94 re I07)

\* = hours/student/year during courses (does not include individual use of computers by students in their own time)

\*\* = hours/year (Sagna, 11a/94)

Le projet a permis d'introduire la pratique dans les cours d'informatique générale et d'ID et d'adjoindre par la même occasion 2 heures de Travaux Pratiques par semaines aux 2 heures d'enseignement magistral qui existaient auparavant. L'introduction des TP a également permis d'introduire le travail en groupe chez les étudiants. (Sagna, 11/94 re I15)

The Director of ÉBAD has just set up a Committee to revise the program of studies at ÉBAD (Sané, 11/94)

## Assessment 4: Impact of project on institutions

See also Specific objectives 6, 7 and 8 as well as Assessments 3, 6 and 7.

### Summary

Apart from impacts described in other assessments, the project had significant positive impacts on the status of the schools, their research capacities, and their understanding of international cooperation.

The three schools enjoyed an increase in status from the project. *ÉBAD* is seen as one of the best-equipped schools in the region, *ÉBSI* considers itself to have as good an Informatics Lab. as any in Canada and to have much improved its credibility as a Centre of Informatics expertise in Quebec, and *ÉSI* has become the leading school of its kind in Francophone Africa. These effects were not solely due to the equipment and expertise acquired from the project, but it is credited with having sparked other donations and help which has resulted in the benefits noted. This improved status has shown itself, especially at *ÉBAD* and *ÉSI*, in requests to mount training courses, seminars and conferences.

The gains in research capacity were several. Research in teams had not been attempted before in *ÉBAD* and *ÉSI*. They learned the pros (ability to tackle larger projects, learning from others) and cons (difficulty of coordinating people who were used to working on their own). They also learned to do cooperative research at a distance. The *ÉBAD* participants had their first taste of research in Information Sciences (all professors at this school are specialists in other disciplines). They learned management skills in research since the research in this complex project required more planning than other projects they had tackled, had deadlines and precise objectives. They built up the capacity to continue research after the end of the project, in both physical and human resources. *ÉBAD* wants to create an African group for research in Information Sciences (*Groupe de Recherche dans les Sciences de l'Information en Afrique - GRESIA*). They also saw at first hand the link between research and application, since their research results were immediately used to select teaching tools for use in their courses.

### Comments

ÉBSI The project produced an Informatics Lab. as good as any in Canada, including Toronto and Western. It brought Informatics into the Programme. It also brought in a specialist (Ph.D.) in Informatics (Yves Marcoux). *ÉBSI* is the second strongest Dept. in Informatics in the University, after *IRO*

(Informatique et recherche opérationnelle) (Lajeunesse, 11/94).

The impact on ÉBSI was considerable. It gave us support when we lacked it from other sources. It improved the credibility of the School as a centre of Informatics expertise within the University. ÉBSI obtained its Informatics Lab. It created a new post of *Chargée du labo*. It brought students into the research process (Deschatelets, 11/94).

Expertise in international cooperation was acquired by ÉBSI, which may be useful in the future (Legault, 11/94)

ÉSI Les effets du projet ne se sont pas limités aux étudiants et aux neuf chercheurs qui ont directement participé à sa réalisation, ils ont commencé à toucher les autres enseignants par le biais des produits élaborés ou des équipements et logiciels reçus. C'est ainsi que notre vidéo sur le "rôle et fonctions des services d'information" est déjà utilisé dans le cadre des cours introductifs aux sciences de l'information. De même, les didacticiels relatifs à la bureautique notamment sur Wordperfect et Lotus sont largement utilisés par les autres enseignants et le personnel administratif de l'ÉSI pour s'initier à ces logiciels.

Par ailleurs, les bases de données documentaires sur CD-ROM, notamment LISA et Library Literature, sont intensément utilisés par les étudiants du cycle supérieur et les enseignants pour leurs recherches documentaires.

Enfin, grâce à l'apport du projet, l'ÉSI est devenue la première école du genre dans l'Afrique francophone. Elle est sollicitée en tant que telle par différents organismes internationaux pour organiser des séminaires de formation en ID. C'est ainsi qu'un Atelier sur l'"Informatisation des bibliothèques" a été organisé pour le compte d'IFLA en Janvier 1994 (El Hamdouchi, 3/94).

Les anciens lauréats qui n'ont pas suffisamment utilisé la micro-informatique et qui n'ont pas pu être exposés à certains logiciels documentaires et aux nouvelles technologies ont désormais la possibilité de combler leurs lacunes grâce aux équipements apportés par le projet (El Hamdouchi, 3/94).

ÉBAD The impact was very positive.

Students wanted more emphasis on ID and this has been obtained (however, not all was due to project: other computers supplied via a project of the Université Cheikh Anta Diop to better equip the science facilities, were preferred by students because they are more accessible, being freestanding and not tied into LAN. Still, all CD-ROMs, except one acquired in

7/94, are on the project LAN).

Also outside organizations want seminars at *ÉBAD* because it is one of the best-equipped schools in the region (again, not only because of the project) (Sagna, 11/94)

## Assessment 5: Impact of project on sustainability of services

### Summary

The services offered by the three schools are teaching and consulting. They become more sustainable by being more in demand. The project has had an impact on the demand for services of the schools by updating the expertise of the staff. Sustainability is also related to the self-sufficiency of the schools - see Specific Objectives 6 and 7.

### Comments

*ÉBSI* The project caused a reform of the informatics program in the school (see Assessment 3). It introduced new techniques into the teaching:

evaluation and development of CAI;

evaluation of documentary software.

These made the teaching program more up-to-date and therefore more competitive. It also introduced competence in management of networks with CD-ROM, a skill which could be exploited for consultation (Deschatelets, 11/94).

*ÉSI* Consulting services have increased since the project finished as project team members now have more time and have begun to offer their consulting services both formally and informally.

Services of international cooperation have been increased by the reputation (visibility) acquired from the project and because of its expertise in CAI. *ÉSI* was invited to join the Consortium of African Schools of Information Sciences (CASIS) and the Director has been elected President of CASIS. CASIS is an IDRC-supported group (Project 93-0607) and consists now of four founding members schools from Morocco, Nigeria, Addis Ababa and Botswana. *ÉSI* has assumed responsibility within CASIS for Consulting and Services (Training) and will prepare a database (El Hamdouchi, 11a/94).

*ÉBAD* To help ensure sustainability of computer services, *ÉBAD* has established a Permanent Training Unit to offer training to

update qualifications and knowledge of IS practitioners in the Region. These have time for training more now than in the past because of *journée continue* (i.e. continuous work from 7 to 14.30 h). It is hoped that this will generate resources for computer maintenance and upgrading (Sané, 11/94).

ÉBAD is also asking for 20 486 machines to be supplied under a World Bank loan to the University. The funds from the Permanent Training Unit are too hypothetical: any funds generated will be needed for emergencies instead of regular maintenance. Also there is need for someone full-time to supervise the computer room, but this is not being arranged (Sagna, 11/94).

## Assessment 6: Unanticipated results of project

### Summary

These came about in part because of the experience gained in working on this project. It was the biggest and most complex project most of the participants had lived through and so it is not surprising that they learned lessons and were faced with unexpected outcomes.

### Comments

GENERAL The lack of desire for further teamwork between ÉBSI and ÉBAD and indeed for a second phase of the project was unexpected (see General Objective 3, page 21).

The realisation that each school which sets up a ID laboratory needs a head of the computer centre on its staff - not realised in 1988! (Deschatelets, 5/94)

The realization that such a complex project needs a full-time coordinator's assistant, who became a full-time staff member after the project (Deschatelets, 11/94).

Each school got extra equipment from other sources, in part sparked by the project, which increased the facilities more than expected.

Adding the evaluation of CD-ROM to the project was unexpected (they "came of age" during the project, also a Unesco project at ÉBSI on CD-ROM in developing countries increased interest in this medium).

ÉBSI Original research on structure of textual DBMS (*Fichier plat*)

(Marcoux, 11/94).

The school was able to keep the extra offices allocated by the University for the project staff. Maryse became acquainted with Desk Top Publishing using WordPerfect 5.1 to produce project documents. A new skill, production of videos, was acquired by staff of the school (Legault, 11/94).

The project permitted Gilles to become Full Professor! (Deschatelets, 11/94)

ÉSI Most teachers now have a PC at home for word-processing (El Hamdouchi, 5/94).

Invitation to join CASIS and Director becoming President (El Hamdouchi, 11a/94)

Administrative personnel have benefited by word-processing facilities on equipment supplied by the project (El Hamdouchi, 5/94).

Effective this year, ID has disappeared from the Curriculum as a separate option because it was so popular and has been integrated into each of the options available (El Hamdouchi, 11a/94) However, this was foreseen by Deschatelets (Project Summary, page 5-6).

ÉBAD Many students use the computers to write their theses. Half the professors (6/12) use Word Processing for preparing course outlines and other material, which can therefore be updated more easily.

Preparation of CAI, with its emphasis on teaching objectives, helped professors (those few directly involved, chiefly Sagna) make their teaching material and courses more to the point, eliminated extraneous matter (Sagna, 11/94).

## Assessment 7: Stakeholders' satisfaction in the project

### Summary

Naturally there were positive and negative aspects of this matter. Most donors and participating institutions were satisfied. The reaction of external bodies (e.g. AIESI members) to the products of the project will be an important influence on satisfaction of some stakeholders: it will not be known for some time. The biggest stakeholder in terms of financial contribution was CIDA and they were somewhat dissatisfied since they saw first hand the obvious

problems at *ÉBAD* but did not experience the positive aspects of the project (e.g. the increased competence of *ÉBAD* and *ÉSI* graduates, great enthusiasm for the project at *ÉSI*).

GENERAL As the Coordinator, I am fairly satisfied. I thought we would have been able to go further on development of CAI. My greatest satisfaction was in the performance of *ÉSI*, and my least in the performance of *ÉBAD* (Deschatelets, 11/94).

IDRC IDRC had several reasons to be satisfied with this project. It helped advance its objectives of capacity building and creating new knowledge in developing countries. It also advanced all of the objectives of the sponsoring Division, ISSD. One of the participating schools has since become an important partner in another Africa-wide ISSD project (CASIS). The wisdom of IDRC in initiating this project was confirmed by the greater financial contributions of other donors (CIDA and Unesco). Though not all the project objectives were fully met, the principal aim, to launch two African regional educational institutions into the computer age, was achieved.

CIDA This was a marginal project for CIDA (not in their main program) and, as such, satisfaction or dissatisfaction was marginal. Based on observations at *ÉBAD* only (they did not fund *ÉSI*), comments were that the project was not well designed by IDRC nor well executed by the project team. CIDA thought that IDRC had resources at Dakar to take corrective action but did not do so sufficiently. There is a marked difference between IDRC and CIDA policies (CIDA is more interventionist) (Drouin, 1/95).

Unesco I am satisfied as a donor. Unesco had four objectives:

- To make CAI modules, which was attained.
- Train schools in the south to make CAI modules, which was half attained
- Acquire the expertise needed to design CAI, which was attained by Unesco
- Produce *principes directeurs* for ID, which was not attained because we could not find the right consultant.

Weak points in the project:

- Equipment, a lot was wasted



- *principes directeurs*
- *ÉBAD*, in communications and management (Courrier, 11/94).

ÉBSI As the Director, I am satisfied. I see that the project gave results, we are now better informed. We understand the limitations of CAI: it is better for teaching about theory than teaching about products because products change too fast; also authoring tools are not all the same, e.g. Authorware is difficult to use, there are better tools now. We need Informatics specialists in the School (Deschatelets, 11/94).

ÉSI It improved the standing of the school. I am proud of the project (El Hamdouchi, 11a/94).

I was very satisfied. The project contributed positively to several important aspects at the school:

- training to update skills and knowledge of the professors,
- helped to make the school well-equipped,
- provided computers,
- brought in the latest techniques in information technology,
- introduced CAI to the school,
- improved the image of the school as an up-to-date institution in the eyes of potential employers of graduates,
- much increased the desire of students to own a PC,
- the school now knows how to undertake research (Benjelloun, 11/94).

ÉBAD As Director, I was satisfied because *ÉBAD* has gained productivity in all aspects of its work by using computers. The project has given a different image to *ÉBAD* because it is now seen as a well-equipped school.

However, on a personal level, I was not satisfied. I was not sufficiently informed of the project, which was negotiated by the University (before I assumed Directorship), and the Coordinator of the project worked with Sagna rather than with me. Also, I was treated impolitely. This occurred, for instance, when I refused the proposed date for a meeting at Rabat because of scheduled exams at *ÉBAD*. The Coordinator insulted me by saying that I had blocked the progress of the project. My letter of complaint on the matter was not answered by the IDRC Regional Director. The CIDA representative also insulted me by suggesting that I bribe Customs officials to free project supplies from the Customs (Sané, 11/94).

## Assessment 8: Performance of project team

### Summary

There were three distinct areas of performance of members of the project team:

- (1) as managers, coordinating the project globally or in each of the three schools;
- (2) as researchers, developing and applying evaluation methods for ID teaching tools;
- (3) as teachers, using teaching tools developed or brought to notice by this project.

There are no objective criteria of performance in any of these areas. Written and spoken comments received by the evaluator regarding the performance of members of the project team were mostly negative, on problems which arose, rather than positive comments on what went well. Evidently, what went well outweighed by far the problems since the project achieved most of its aims. This fact reflects very well on the performance of all members of the project team.

### Management

#### Project Coordinator (Gilles Deschatelets)

He was the principal designer of the project and successfully undertook lengthy negotiations with IDRC during the project formulation. Once the project started (3/90) he had numerous responsibilities. Because of his unique position in the project, it is greatly to his credit that the project succeeded. His central position also contributed to his being the target of most criticisms.

In part because of the departure from *ÉBSI* early on of two professors working on the project, the Coordinator found himself unable to fulfill all of his duties in addition to his regular job as Associate Professor at *ÉBSI*. This caused difficulties in communication with the other two schools. During a visit to the project, the CIDA representative in Dakar noted this and pointed out the problem in 6/91. As a result, an assistant to the Coordinator (Maryse Legault) was hired in 11/91. Thereafter these difficulties largely disappeared. Also the Coordinator did not ensure that the equipment sent to *ÉBAD* and *ÉSI* was suitable for local conditions (110v instead of 220v, QWERTY instead of AZERTY keyboards, etc.). This caused delays in putting the equipment to use at *ÉBAD* and *ÉSI*. These problems were rapidly overcome at *ÉSI*

and eventually overcome at ÉBAD, though with some residual resentment by the Director of ÉBAD. Even at the end of the project, ÉSI and ÉBAD staff were annoyed that the Coordinator did not seem to be following the proper procedure since (1) he had put ÉBSI labels on the ÉSI video, sent to ÉSI; (2) did not mention on the brochure that it was largely developed at ÉSI; (3) had not circulated a copy of the brochure for comments to ÉBAD.

Maryse Legault was delegated responsibility for the tasks listed below, all of which she carried out well.

### ÉBSI management

The Project leader at ÉBSI has been Gilles Deschatelets. For the final years of the project he has had a steady team (Yves Marcoux Researcher, Lucie Carmel Lab. Supervisor, Maryse Legault Assistant, and Sylvie Michaud Research Assistant), and the performance of all was good.

### ÉSI management

ÉSI was the only school without marked management problems. The cooperative attitude of the Director Mohamed Benjelloun, the ÉSI Project leader Abdelmoula El Hamdouchi, and all the project team, undoubtedly contributed. ÉSI staff put in a lot of overtime on the project (Table 13).

### ÉBAD management

ÉBAD performed relatively poorly, which may have been caused by several factors including little sense of project ownership by the Director Ousmane Sané (since the Director who took part in the project formulation left ÉBAD just before the project started), lack of background in ID by ÉBAD staff, and impatience (after provocation) by the Project Coordinator, IDRC and CIDA Staff.

### Joint research

Research targets were met except that ÉBAD did not produce its CAI module. The CAI module *Fichier plat*, produced by ÉBSI, led to an original exploration of the properties of textual databases which the researcher, Yves Marcoux, is anxious to pursue.

The research on developing evaluation methods was shared between the three schools and there are no performance criteria available. However, applying the research to the evaluation of 27 ID products (documentation software, CAI modules and CD-ROMs) was not shared equally (Table 12). ÉBSI carried out most of the work that ÉBAD should have performed, but the reasons for this are unclear.

### Teaching

Performance in teaching appears to have been good in all three schools, as is shown by the reviews of skills acquired (Specific Objective 1, page 22), changes in curricula (Assessment 3, page 47) and progress of students (Specific objective 5, page 32).

### Comments

#### COORDINATOR

He had difficulties because two professors working on the project left ÉBSI early on and were not soon replaced; also it took time to develop management tools for such a complex project (Deschatelets, 11/94).

The coordinator's management problems were solved by Maryse. The QWERTY keyboards were not so bad, we soon got used to them! (El Hamdouchi, 11a/94).

The Coordinator did not always follow hierarchical procedures, informing Sané instead of Sagna. His long silence at the beginning caused problems, but these were solved by Maryse, who was very professional, as was Lucie and El Hamdouchi (Sagna, 11/94).

There was a series of difficulties in the project. I am very bitter. The Coordinator asked a lot of us but not of himself. The equipment was promised for delivery in 2 or 3 months at the Réunion de concertation of March 1990 in Montréal, but it did not come for a long time. I told him of the special needs of Sénégal re keyboards, voltage, etc., but those needs were not met, and it took a year to put right (Sané, 11/94).

#### Duties of Assistant to Coordinator

Achat de la documentation pour les trois écoles  
 Achat des CD-ROM pour les trois écoles  
 Achat des didacticiels pour les trois écoles  
 Achat des équipements pour les trois écoles  
 Achat des logiciels pour les trois écoles  
 Achat du système-auteur pour les trois écoles  
 Bilan des réunions de concertation et suivi  
 Conception d'un glossaire pour les grilles d'aide à l'évaluation  
 Correspondance avec l'Unesco  
 Correspondance avec le CRDI  
 Correspondance avec l'ACDI  
 Correspondance avec l'ÉBAD  
 Correspondance avec l'ÉSI  
 Création des documents de travail  
 Cueillette d'information sur des dossiers ponctuels  
 Cueillette d'information sur les produits défectueux

Embauche de consultants et supervision (Robert Miller et Hubert Fondin)  
 Envois des colis à l'étranger (inventaire des colis, préparation matérielle)  
 Gestion des besoins ponctuels  
 Normalisation de la présentation des grilles d'aide à l'évaluation  
 Normalisation du vocabulaire des grilles d'aide à l'évaluation  
 Organisation des réunions de concertation et de la formation (ordre du jour, bilans contacts, invitations)  
 Organisation des voyages (achats billets, réservation hôtel, coordination entre tous les intervenants)  
 Reproduction des documents (vidéo, textes)  
 Suivi de l'état d'avancement des dossiers  
 Supervision de la conception d'un logo pour le projet (Legault, 11a/94).

## Research

Table 12

### Evaluation of ID products by each school

School	Number of ID products evaluated
ÉBSI	22
ÉSI	10
ÉBAD	4

(Legault, 11/94 re I13)

## ÉSI

Table 13

### Nombre d'heures travaillées sur le projet en sus des heures payées par le projet

Activités	1991	1992	1993	1994
Élaboration de la grille d'évaluation de didacticiels	50	160	100	20
Évaluation de				
- CD-ROM		20	60	80
- Logiciels doc.		20	20	20
- Didacticiels		20	100	30

Conception et développement du didacticiel SRD	100	100	1200	40
Conception et développement du Vidéo	150	150	60	20
Activités communes	20	50	80	170
Articles		20	50	150
Installations des logiciels, Rapports, Guide	100	50	30	70
Total	420	640	1700	600

(El Hamdouchi, 11/94 re I08)

ÉBAD Data is not available on hours worked on the project (Sagna, 11/94 re I08)

#### Management

ÉBAD did not take the project sufficiently seriously and did not invest the necessary resources (Deschatelets, 2/94)

*D'abord et surtout, je dirais que la manque de coopération et d'enthousiasme de l'ÉBAD a été le point le plus négatif de ce projet..... À mon avis, la majorité des problèmes que nous avons connus avec l'ÉBAD témoignent d'un manque d'intérêt pour le projet (Deschatelets, 4/94).*

Financial management was partly in the hands of the University and financial decisions could not be taken quickly. Also, reporting formats were different at the two Universities (Deschatelets, 11/94).

The Administration of ÉBAD did not do its part: I personally had to see after administration such as flights, search for spare parts for equipment, etc. Also the University accountant held things up (Sagna, 11/94).

Communication was a big problem. Email was needed but not put in. A fax machine was delivered but not installed. We only had two telephone lines. I requested another line twice by letter to the Société nationale de téléphone (SONATEL). I did not badger SONATEL on the phone nor visit them. Sagna also refused to push with SONATEL the affair of getting another line for the fax (Sané, 11/94).

I figured it was up to the Director to push SONATEL since he

had written them. He got without difficulty an extra line recently for a MINITEL installation in the Library (Sagna, 11/94).

### Research

*Par ailleurs, avec le recul, force m'est de constater que les professeurs de l'ÉBAD impliqués dans ce projet n'avaient pas les connaissances préalables requises en ID pour contribuer activement et profiter pleinement du projet (Deschatelets, 4/94).*

A problem in doing research for this project was that we were not used to working in teams at ÉBAD. Also, none of the researchers had a qualification in Information Sciences, we are all specialists in other areas such as History (Sagna, 11/94).

Robert Miller went out 9/93 and helped in the production of the CAI module. He brought back a draft, but it was unusable, so it was sent back with comments; thereafter no progress. ÉBAD did not say that they could not manage what they had been assigned (evaluations, production of CAI) - always they said that they could do it. Maybe we should have given them more help (*missions de travail*, etc.). (Deschatelets, 11/94)

Two modules of CAI remain to be completed. He will try to complete them (Sagna, 11/94).

## Assessment 9: Opinions on improving and extending collaboration

### Summary

Methods of improving collaboration between the three schools range from changing attitudes, both towards colleagues from other schools and to those within the school, to improving communications. Of course, these are post-mortem opinions as far as this project is concerned.

As to extending collaboration to other schools, each of the three schools already has plans afoot to work with other schools and bring to them some of the acquired knowledge and skills from this project.

### Comments

### Resources required to improve existing

ÉBSI Attitudinal: The main need is to have agreement/willingness to participate/commitment among the Directors of the participating institutions (Deschatelets, 11/94).

There is a big respect for each other among the researchers; future cooperation will depend upon Directors (Legault, 11/94).

Practical: better communications, e.g. links to INTERNET, availability of fax, to researchers, not only to the Director, a full-time coordinator (Deschatelets, 11/94)

ÉSI Collaboration within the school is important. The agreement on the project by the Director and of the School Administration is needed. Another important aspect is avoidance of conflicts between team members, for work not done by one affects the others. External factors also come in. For example, laborious Customs procedures can slow down the project. (El Hamdouchi, 11a/94).

### How to extend to other IS schools

ÉBSI Will be done by sending the pamphlet to many schools and requesting feedback (via *BIEF* as suggested by Y. Courrier).

Will also depend on reaction of other *AIESI* schools to products.

Should include *ISD*, Tunis (Deschatelets, 11/94)

ÉSI Interest schools in Algeria, Tunisia in results of project, e.g. at Seminar on 5 December 1994. They often work together.

Also work within *CASIS*, e.g. translate *grilles d'évaluation* into English (El Hamdouchi, 11a/94).

ÉBAD Will continue work with *Université Bordeaux III* (Roland Ducasse) and schools in Tunis and Cotonou within the Programme of Cooperation on Multimedia.

However, the fact of not being in *CASIS* will be a handicap (Sagna, 11/94).

Unesco The schools should send CAI modules and videos to Unesco for distribution to other schools (Courrier, 11/94).



## Assessment 10: Recommendations for follow-up activities

### Summary

Even though a second phase was anticipated in the project proposal, this had not been requested by the participants at the end of the project. *ÉSI* did suggest a second phase, but the idea did not generate sufficient enthusiasm for a common front to be formed, especially in face of the opposition of the project coordinator to further work with *ÉBAD*. It seems that each of the schools may seek to work on various leads uncovered by the project, either alone or in existing alliances. It is not recommended that IDRC or CIDA seek to generate enthusiasm for a second phase.

Two areas on which there was some agreement for the necessity for further joint work were production of CAI modules and harmonization of programs. The suggestion of *ÉSI* that the CAI modules cover areas where there was a communality of programs would thus fit in very well.

Another area which is promising is the research of Yves Marcoux of *ÉBSI* on the *Fichier plat*. He is attempting to introduce the same level of rigour into the theory of textual databases as already exists for relational databases. This work may put much of the efforts of ISSD on a more solid footing.

### Comments

GENERAL *En tant que coordonnateur de ce projet et à la lumière des constatations qui précèdent, je recommande au CRDI et à l'ACDI:*

- 1/ *De ne pas financer une phase II au présent projet tel qu'initialement prévu. S'il y avait une suite à donner à ce projet, elle devrait porter sur un ou d'autres aspects que ceux développés dans la phase I.*
- 2/ *De ne plus financer de projet de coopération à l'ÉBAD tant et aussi longtemps que cette école n'aura pas changé d'administration (Deschatelets, 4/94).*

ÉBSI Further work on research with *ÉSI*, not with *ÉBAD* (Deschatelets, 11/94).

Further work on harmonization, especially with *ÉSI* and *ISD* (Tunis), both of which have been influenced by North America (in part *ARCIS* by *IDRC*); whereas *ÉBAD* has been more influenced by France; therefore bigger difference in pedagogy. Also, *Fondin* and *Courrier* are more influenced by France. A joint project could perhaps be organized through *AIESI* and financed through *AUPELF* (Deschatelets, 11/94)

Further work on research on the *Fichier plat* (Marcoux, 11/94). *J'ai des projets de recherche concrets [sur le fichier plat]... en fait six sujets, allant du théorique au pratique, qui peuvent faire l'objet de projets de recherche:*

- 1- propriétés théoriques du modèle tel qu'il est en ce moment;
- 2- études de catégories de transformations de chaînes pouvant être utilisées dans le modèle (comme transformations automatiques, etc.);
- 3- généralisation du modèle pour inclure les opérations orientées mots (adjacence, proximité, phrase, paragraphe, etc);
- 4- généralisation du modèle pour accommoder les documents structurés;
- 5- généralisation du modèle pour inclure des caractéristiques relationnelles, du type que l'on retrouve dans certains *SGBD* textuels, tels: *MINISIS*, *BASIS Plus*, et *Gesbib*; et
- 6- développement d'un prototype sur machine du modèle pour utilisation dans l'enseignement de la gestion de bases de données textuelles. (Marcoux, 1/95).

## ÉSI NÉCESSITÉ D'UNE PHASE II DU PROJET

### *Raisons justifiant une deuxième phase*

L'expérience de l'*ÉSI* avec les projets financés par l'extérieur a montré que dès que les ressources extérieures qui soutenaient les activités du projet ne sont plus disponible, ces activités tendent à être abandonnées faute de stimulants pour les enseignants et en raison des moyens matériels insuffisants qui sont mis par l'État à la disposition de l'école pour continuer ces activités au même niveau et rythme.....

En conséquence, pour que l'élan des trois écoles demeure soutenu et que le projet porte pleinement ses fruits et atteigne ses objectifs lointains de développement de secteur de l'*ID* dans le monde francophone, il est nécessaire de donner suite à ce projet dans le cadre d'une deuxième phase.

*Les grands axes de la Phase II...*

*Élaboration de didacticiels sur certaines parties des cours communs aux trois écoles.*

*Élaboration de manuels sur les fonctions documentaires qui couvriraient les volets informatisés de ces fonctions.*

*Participation aux rencontres internationales.*

(El Hamdouchi, 3/94).

The request in 3/94 for a Phase II was not supported by the other schools. *ÉBSI* hasn't the manpower to follow-up. Meanwhile *ÉSI* should strive with its own resources to carry out certain follow-up activities:

local dissemination of skills acquired from the project (e.g. seminar 5/12/94);

keep both installations (Hardware and software) and skills up-to-date;

integrate *ID* fully into all courses (started 9/94 in 3rd year by suppressing the *ID* option) (El Hamdouchi, 11a/94).

ÉBAD Il faudrait absolument que d'autres projets de recherche communs puissent voir le jour, notamment sous la forme d'équipes de recherche composées d'enseignants provenant de différentes écoles. En effet, sur ce plan le projet a montré combien cette forme de travail pouvait être enrichissante par la confrontation des expériences et les philosophies que cela implique, le tout débouchant sur un enrichissement mutuel sur les plans personnel comme professionnel (Sagna, 4/94).

Finish the *ÉBAD* CAI module (Terminology of *ID*).  
Publication on evaluation of documentation software (Sagna, 11/94).

Unesco Further work on *Principes directeurs* for teaching of *ID* is required, but I do not know who could do it or how it could be financed.

Also further CAI modules should be produced, but I do not know how these could be financed. In this respect, I believe that a stable practical field such as cataloguing or documentary searching is suitable for CAI, not necessarily a theoretical field as implied by G. Deschatelets (ASSESSMENT 7, page 55) (Courrier, 11/94).

## TRENDS IN INFORMATIQUE DOCUMENTAIRE

*ID* consists of the application of the most appropriate tools of information technology to the documentation field. As such, it has evolved as IT itself has evolved. The first applications were on mainframe computers, then on minicomputers, and now on microcomputers. The best known example is the information retrieval software ISIS for a mainframe computer (1964), MINISIS for a minicomputer in 1978 and CDS MICROISIS for personal computers in 1986.

The extraordinary reductions in cost of these machines has led to the gradual extension of the tools of *ID* to smaller and smaller documentation centres and libraries, and more and more relevance to developing countries. Because of the slower penetration of *ID* in developing countries, its state of advancement at *ÉBSI* was well ahead of that at *ÉSI*, and even more so than at *ÉBAD*, when the project began.

When the first *ID* applications were developed, they covered only a part of the documentation field, mainly information retrieval. Hence *ID* was taught as a separate discipline and option in documentation programs. With time, *ID* applications have sprung up all over the documentation field and so *ID* is now seen as an indispensable and compulsory component of documentation training. The following comments by various persons connected with this project illustrate ways that *ID* is seen as evolving.

1. Use of INTERNET by professionals in *ID* will increase because of:

speed of access,  
material unpublished, only way to get at them.

INTERNET facilities used like this are:

Gopher,  
FTP,  
WAIS,  
WWW for hypermedia using comm. software such as X-MOSAIC.

2. Trend towards hypermedia as a vehicle for transmitting information.
3. Standardization of electronic formats: textual and multimedia. There are several standards being considered by ISO, including UNICODE and SGML (Standardized General Mark-up Language) (Marcoux, 11/94)

4. *Les industries de la langue liées à la documentation et l'ID*, because of communalities of text and language; related to indexation, e.g. interrogation of yellow pages in natural language: the query "I have a blocked wash-basin" leads to "plumber" (*MINITEL* already does it).
5. Explore role of information in society, especially re decision-making: under- and over-utilisation (Courrier, 11/94).
6. *ID* is disappearing as a discipline - it is being integrated into other disciplines and into informatics. It is becoming more interdisciplinary.
7. It is also evolving towards the user, through treatment of whole-text, use of AI to help search, robots in Japan to fetch documents, in France to fetch cassettes (El Hamdouchi, 11/94).
8. The project has led us to see that we do not know how to define *ID*, we realize that it forms a part of every course on documentation, as more and more documentary functions are being computerized. Perhaps a special informatics course on DBMS is required.
9. Graduates will gradually become specialists in different *ID* functions instead of being general documentalists (Sagna, 11/94).
10. Should we continue to speak of *Informatique documentaire*, considering that there are so many media now, especially electronic and optical ones? *ID* was valid when we were mainly concerned with functions of documents such as cataloguing, indexing, etc. The document is only one support for data among many. Also, there are many different kinds of data now being considered: statistics, multimedia, etc. (Camara, 11/94).

## APPENDIX 1

Testing of ISSD Evaluation Approach

The ISSD Evaluation Plan, as set out in the draft document supplied in May 1994, provides a systematic method to link the impact of a project with the Division's stated objectives. The result of applying the method to this project is shown in the Table which follows.

Using the method brought out the fact that the project's objectives and outputs did not adequately deal with one of the Division's Objectives: Better Access to and Use of Information. Suggestions for making up for this lack are given in the Table.

Another result of using the ISSD method was that indicators of achievement of project objectives were formulated at the final *Réunion de concertation* and data for them was supplied to the evaluator by the project participants. This proved very helpful in the evaluation as it ensured that the project was systematically covered. Appendix 2 contains a list of the indicators, Appendix 3 shows how they were related to the project objectives, and Appendix 4 reveals what data was sent from each school. Even though these indicators referred to the achievement of project objectives, they were very well suited to measuring the impacts of the project, as is set out in the Table below (symbolized by I01 - I18). Other indicators described in the Table (without numbers) would also be needed to complete the analysis.

From this test of the ISSD evaluation methodology, it became clear that it should have been applied during the project formulation stage, not after the project had finished. Of course, it was not available in 1988! However, leaving the application till after the project resulted in four important negative consequences:

1. Much data for the indicators could not be obtained, as changes ascribable to the project were needed, and there was no baseline data with which to compare.
2. Some indicators were very ambiguous to interpret and each school had its own ideas of meaning of an indicator. Unambiguous meanings could have been settled during the project had the indicators been there from the beginning.
3. Several other changes, such as staff turn-over or other equipment acquired by a school during the project, affected indicators in a way which was impossible to determine a posteriori.
4. The most meaningful indicators, showing the impact of the project on access to and use of information in Africa, were not sought at all because the relevance of this objective was not emphasized in the project.

## APPENDIX 2

## Projet du CRDI 88-1010, Réseau pédagogique

*Liste des indicateurs d'achèvement d'objectifs, et les données à être fournies par les trois Écoles*

OGx = Objectif général numéro x  
 OSy = Objectif spécifique numéro y  
 ID = Informatique documentaire

I01. Accroissement de l'autonomie en utilisation des technologies de l'information (OS3, OS6, OS7)

*Liste des interventions des personnes de ressource, dans la même École et dans d'autres Écoles du Réseau, chaque année depuis 1988*

*Résumé de l'utilisation des CD-ROMs chaque année depuis 1988*

*Résultats du marketing de l'EAO*

I02. Accroissement du nombre d'étudiants formés en ID (OS1, OS3)

*Nombre d'étudiants formés en ID chaque année depuis 1988*

*Nombre moyen d'heures par année de formation en ID des étudiants de niveaux différents chaque année depuis 1988*

I03. Accroissement du nombre de diplômés ayant obtenus un poste dans une institution nationale ou régionale (OG1, OS3, OS5)

*Nombre de lauréats de chaque École ayant obtenus de tels postes chaque année depuis 1988*

I04. Amélioration de la performance des lauréats du deuxième cycle de l'ÉSI et de l'ÉBAD en 1994 (OG1, OS5)

*Liste des lauréats et les coordonnées de leurs patrons immédiats*

I05. Accroissement de l'utilisation de didacticiels dans l'enseignement de l'ID (OS1, OS3, OS5)

*Résumé des souvenirs des professeurs à chaque École*

I06. Augmentation du parc informatique à chaque École (OS3)

Liste du matériel informatique installé à chaque École chaque année depuis 1988

I07. Accroissement de l'utilisation du matériel informatique dans les Écoles (OS3)

Nombre d'heures d'utilisation du matériel informatique pour

l'enseignement  
les recherches  
les démonstrations

dans chaque École chaque année depuis 1988

I08. Contributions au projet par les Écoles et par d'autres donateurs

Nombre d'heures travaillées sur le projet, en sus des heures payées par le projet, par le personnel de chaque École chaque année depuis 1988

Contributions aux Services d'appui et aux Équipements par chaque École chaque année (voir budget du projet)

Liste des contributions complémentaires d'autres donateurs

I09. Évolution des programmes d'études (OG1, OS2)

Programmes d'études de chaque École chaque année depuis 1988

I10. Collaboration entre les Écoles au cours du projet (OG2)

Listes des activités de collaboration entre les Écoles entreprises chaque année depuis 1988

I11. Collaboration entre les Écoles après le projet (OG3)

Listes des activités de collaboration entre les Écoles envisagées après le projet

I12. Exportation de l'expertise en ID aux autres fonctions documentaires (OS8)

Exemples de l'utilisation des connaissances et idées



acquises dans le projet, par des professeurs non-impliqués directement dans le projet, de chaque École

I13. Didacticiels, logiciels et CD-ROMs évalués (OS4, OS9)

Données déjà fournies

I14. Diffusion (OS10)

Précisions supplémentaires sur les publications découlant du projet et le niveau de leur diffusion

Liste des séminaires, ateliers, conférences, etc. portant sur le projet, ou sur les connaissances acquises grâce au projet, chaque année depuis 1988

I15. Stratégies et techniques pédagogiques (OG1, OS2)

Modifications aux stratégies et techniques pédagogiques provoquées par le projet

I16. Meilleures performances des étudiants (OG1)

Tableaux des notes des étudiants dans les classes touchées par le projet chaque année depuis 1988

I17. Connaissances accrues parmi les lauréats des outils de l'ID (OG1)

Estimations des nombre de diplômés de chaque École chaque année depuis 1988 sachant utiliser les différents logiciels et les CD-ROMS, implanter les postes de travail, gérer les réseaux locaux, etc.

I18. Harmonisation des programmes d'enseignement de l'ID (OS2)

Décision sur l'acceptation du rapport FONDIN

le 30 mai 1994

Peter Browne  
Consultant CRDI  
Division des Sciences et Systèmes d'Information  
BP 8500, Ottawa  
Canada, K1G 3H9

## APPENDIX 3

## Relationship of indicators and project objectives

	g1	g2	g3	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10
01						x			x	x			
02				x		x							
03	x					x		x					
04	x							x					
05				x		x		x					
06						x							
07						x							
08 *													
09	x				x								
10		x											
11			x										
12											x		
13							x					x	
14													x
15	x				x								
16	x												
17	x							x					
18					x								

\* I08 is used in Assessment 7

## APPENDIX 4

## Indicators supplied by each school

Indicator	ÉBAD	ÉBSI (Marcoux)	ÉSI
I01	x	x	x
I02	x	x	x
I03		x	
I04			x
I05	x	x (M)	x
I06	x	x	x
I07	x	x	
I08	x	x (M)	x
I09	x		x
I10	x	x	x
I11		x	
I12	x	x	
I13	x	x	
I14	x	x	
I15	x	x (M)	x
I16		(M)	
I17	x	x (M)	
I18	x		

## APPENDIX 5

Questionnaire for employers of graduates from the schools

**CONFIDENTIEL**

Questionnaire destiné aux patrons des lauréats du deuxième cycle de l'ÉSI en ce qui concerne des modifications au rendement, dues aux études en informatique documentaire, des dits lauréats depuis leur réintégration au service

Nom du lauréat.....

Poste du lauréat.....

Service.....

Adresse au service.....

.....

.....

No. téléphone.....

No. fax.....

Nom du patron.....

Poste du patron.....

Description de poste du lauréat (veuillez remplir ou joindre la description)

.....

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Utilisation de l'informatique documentaire dans le travail du lauréat

Veillez indiquer l'utilisation potentielle de l'informatique documentaire dans le travail du lauréat

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Veillez indiquer l'utilisation réelle de l'informatique documentaire dans son travail avant sa formation à l'ÉSI

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Veillez indiquer l'utilisation actuelle de l'informatique documentaire dans son travail depuis sa formation à l'ÉSI

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Modifications au rendement du lauréat dues à ses études en informatique documentaire

Veillez indiquer, de façon qualitative, les modifications de son rendement que vous avez constatées et que vous jugez attribuables à ses études en informatique documentaire

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Veillez préciser des exemples concrets de modification de rendement que vous jugez attribuables à ses études en informatique documentaire

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Merci de votre collaboration!

Veillez expédier le questionnaire rempli à:

Monsieur Peter Browne  
Consultant du CRDI  
BP 8500, Ottawa  
Canada K1G 3H9

## APPENDIX 6

## PUBLICATIONS ET CONFÉRENCES

RÉSEAU PÉDAGOGIQUE POUR L'ENSEIGNEMENT  
DE L'INFORMATIQUE DOCUMENTAIRE

BACHR, A. A.

L'informatisation d'une service d'information et de documentation. Comment? Par qui?  
16p. (à paraître)

CARMEL, L.; LEGAULT, M.; DESCHATELETS, G.

Les langages de navigation des disques optiques compacts (vidéo). Montréal: ÉBSI - Université de Montréal. 1994. (22 minutes).

DESCHATELETS, G.; EL HAMDOUCHI, A. et SAGNA, O.

A mini-international network for the production of computer-assisted learning materials.

Journal of Education for Library and Information Science  
vol.32, no 1-2 (June 1991) p.121-126

DESCHATELETS, G.

Conférence prononcée dans le cadre du congrès de l'ASIS, Toronto, 1991

DESCHATELETS, G.

Réseau pédagogique coopératif pour l'enseignement de l'informatique documentaire: Un exemple de coopération multilatérale (Sénégal - Maroc - Canada) d'écoles de sciences de l'information de la francophonie.  
(à paraître)

ÉCOLE DES SCIENCES DE L'INFORMATION.

Rôles et fonctions des services de l'information (vidéo).  
Rabat. 1994. (24 minutes)

EL HAMDOUCHI, A.

The Foundations of Effectiveness Measurement for Information Retrieval Systems, Revisited  
novembre 1993, 73p. (à paraître)

EL HAMDOUCHI, A.; ABRAK, S.; BACHR, A.; ROCHDI, N.

Une grille d'aide à l'évaluation de didacticiels selon une approche économique intégrée.  
1994 (à paraître)

EL HAMDOUCHI, A.; BACHR, A.; ROCHDI, N. et ABRAK, S.  
 Démarche pour l'informatisation de la fonction stockage et  
 recherche documentaire (SRD).  
 Rabat: Les publications de l'École des sciences de  
 l'information. mars 1994. 71p.

FONDIN, H.  
 Guide d'harmonisation  
 Bordeaux, 1994 (à paraître)

MARCOUX, Y.  
 A retrieval model for common textual database management  
 systems. 25p.  
 Conférence prononcée à l'Association canadienne des sciences  
 de l'information  
 Montréal, 26 mai 1994.

ROCHDI, N.  
 Étude comparative des logiciels d'EAO.  
 Rabat. [1992]  
 Rapport de mission

RÉSEAU PÉDAGOGIQUE POUR L'ENSEIGNEMENT DE L'INFORMATIQUE  
 DOCUMENTAIRE.  
 Logiciels documentaires: Cahier des évaluations et des fiches  
 techniques.  
 1994

RÉSEAU PÉDAGOGIQUE POUR L'ENSEIGNEMENT DE L'INFORMATIQUE  
 DOCUMENTAIRE.  
 CD-ROM documentaires: Cahier des évaluations et des fiches  
 techniques.  
 1994

RÉSEAU PÉDAGOGIQUE POUR L'ENSEIGNEMENT DE L'INFORMATIQUE  
 DOCUMENTAIRE.  
 Didacticiels: Cahier des évaluations et des fiches techniques.  
 1994

RÉSEAU PÉDAGOGIQUE POUR L'ENSEIGNEMENT DE L'INFORMATIQUE  
 DOCUMENTAIRE.  
 Grilles d'aide à l'évaluation et fiches techniques de produits  
 documentaires informatiques: logiciels documentaires,  
 didacticiels et CD-ROM documentaires.  
 1994